Workbench

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WORKBENCH

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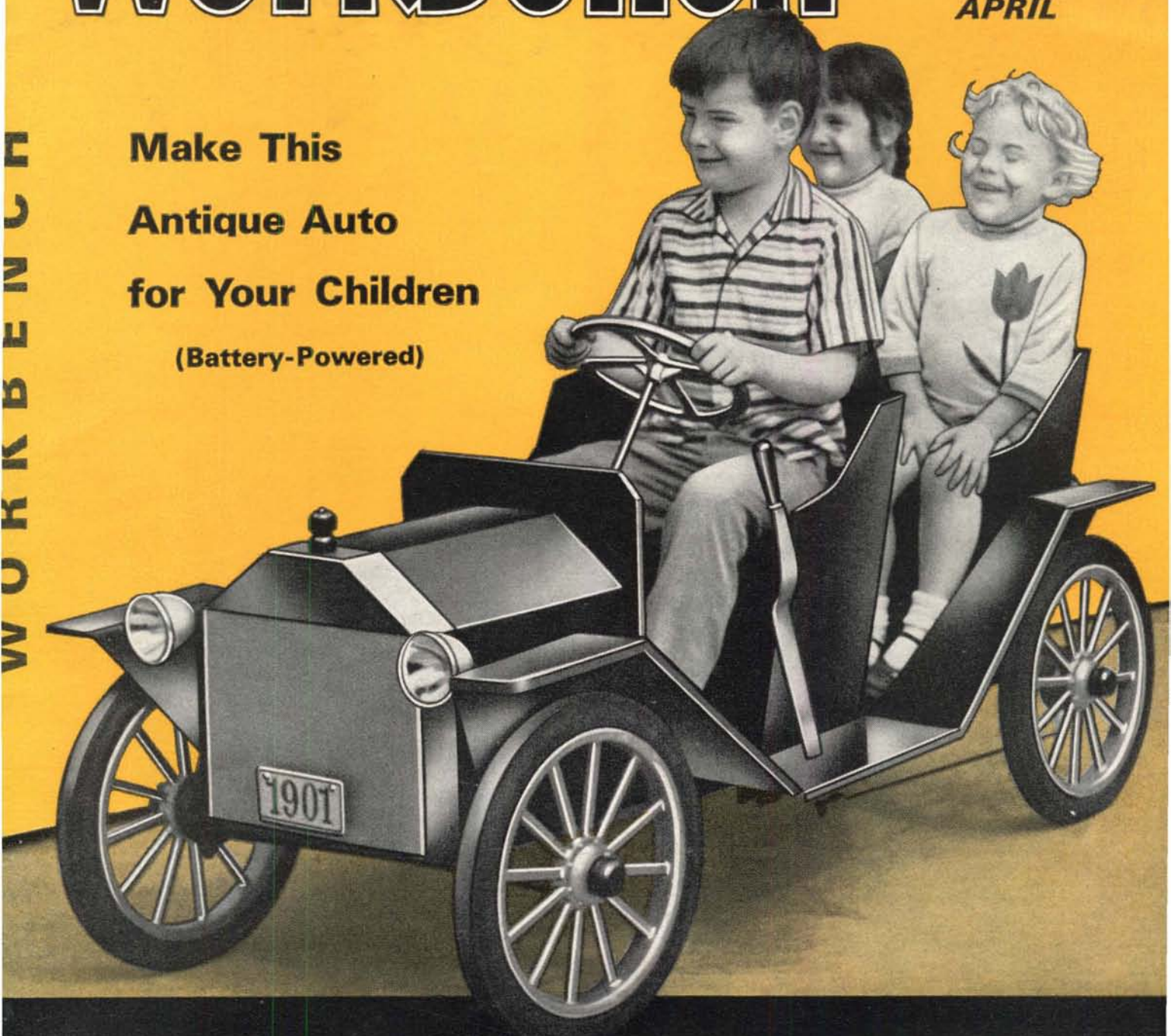

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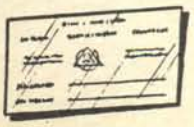

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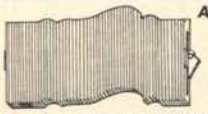

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WORKBENCH volume 18 number 2

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LETTERS TO THE EDITOR

Dear Mr. Hedden:

Shown in the enclosed snapshot are a grandmother clock and two chairs I made. The clock is just 74 in. tall and follows the lines of a clock 200 years old, on exhibit in the New York Metropolitan Museum of Art.

Chairs of the type shown I believe were made in Philadelphia many years ago, and are called Windsor chairs or Captain's writing chairs.
W. K. Wood, Staten Island, N. Y.

Dear Mr. Wood:

Your work is excellent. Brings to mind that we are preparing some plans for museum-type furniture, and Windsor-type chairs, such as yours will be included.

Dear Mr. Hedden:

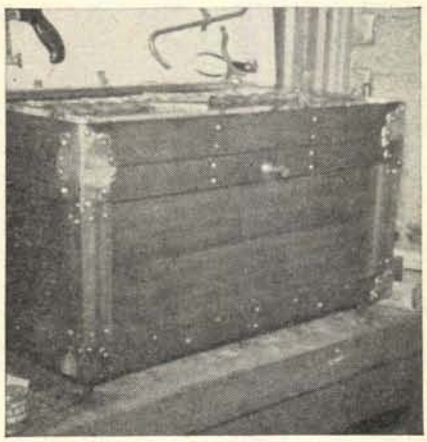
How about an article on the repair and maintenance of an automatic washing machine? My owner's manual gives no instruction on oiling or greasing or other maintenance. Such machines do not break down often, but would like to know something about them.
J. K. Smith, Chicago.

Dear Mr. Smith:

Researching along these lines we recently had the privilege of visiting the local branch of the Maytag Co., where we watched the rebuilding and repair of several automatic washing machines. After this experience we must say this about do-it-yourself repair of these major appliances: Let your wife use the machine until it simply does not work properly, then call a competent service man. We repeat 'competent.' If you are in doubt as to who to call, telephone the nearest branch of the company that built your machine and ask them to recommend a service man. Automatic washers require no lubrication or other maintenance, but being mechanical do occasionally require servicing due to normal wear and tear. As a final note; most women use too much soap or detergent. The excess suds run over the edge of the inner tub causing trouble, and produce deposits in the drain lines and other parts of the machine, reducing its efficiency. Remind your wife that just because one cup of soap does a good job, two cups do not necessarily do twice as good a job. We might someday in the future have an article describing how an automatic washer works, if we have enough requests.

Dear Mr. Hedden:

The tool chest in the photo was made by a blind man. I did help some, but most of the work was done by him; this was 20 years ago when I was just a boy. I paid the man 50 dollars for the chest, and it worked out to 40 cents an hour. The brass corners on the chest I purchased for 50 cents at that time. Now, I cannot find corners like them, and probably would have to pay a couple of dollars apiece if I could.
Earl Measure, Allston, Mass.



Dear Mr. Measure:

Thank you for the photo and interesting letter. We do not have room to show Mr. Measure's workbench, on which the chest is sitting; you can see part of the neat back panel for tools. We are sure you do some nice work yourself, Mr. Measure.

Jay W. Hedden

Jay W. Hedden, Editor

Set up an ELECTRICAL APPLIANCE REPAIR shop in YOUR HOME and make good money. No big investment or costly equipment required. All you need is a workbench, spare time and N.T.S. easy Home Training in Electrical Appliance Repair.

Now, you can turn spare hours into cash profit by repairing any home appliances—from toasters, electric irons to washing machines and even room air conditioners—right in your own workshop. Here's your big chance to get into business for yourself on a full-time or part-time basis, doing work you really enjoy. Or take a high-pay job with an appliance manufacturer or large service company.

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Pays $100.00 Weekly from First Day for Life

NO WAITING PERIODS ✶ ONLY YOU CAN CANCEL

If you are the one American in four who does not drink, the Gold Star Total Abstainers' Hospitalization Policy will pay you $100.00 a week in cash, from your first day in the hospital and will continue paying as long as you are there, even for life!

If you do not drink and are carrying ordinary hospitalization insurance, you are of course helping to pay for the accidents and hospital bills of those who drink. Alcoholism is our nation's No. 3 health problem, ranking immediately behind heart disease and cancer! With the GOLD STAR PLAN you are not called upon to help pay the high bills for the ailments and accidents of those who drink. GOLD STAR rates are based on the SUPERIOR HEALTH RECORDS of Non-Drinkers!

For the first time, you can get the newest and most modern type of hospitalization coverage at unbelievably low rates, because the Gold Star Policy is offered only to non-drinkers. And your low Gold Star premium can never be raised because you have grown older or have had too many claims. Only in the event of a general rate adjustment up or down for all policyholders can your rate be changed!

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MR. WILLIAM A. BURCH, Howard, Ohio—"Thanks so much for the check and the fine way it was paid. I don't hesitate to recommend your company to anyone."

ELMER H. MURDOCH, Philadelphia, Pennsylvania—"This is to acknowledge with thanks the receipt of your check for my wife. It was very kind of you to do this. It proved a great help to us, as we have been under many extra expenses since our car accident."

MR. MILFORD HERRICK, Flint, Michigan — "I am very pleased with the way you took care of my claim for my recent illness. I will recommend your Company to the right people whenever I can."

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With a Gold Star Total Abstainers' Hospitalization Policy, you receive $100.00 per week in cash, as long as you remain in the hospital, starting from your very first day there, for either sickness or accident. If your hospital stay is less than one week, you still collect at the rate of $14.29 per day. Even if you are already covered by another policy, the GOLD STAR PLAN will supplement that coverage, and will pay you directly, in addition to your present policy. And your benefits are tax-free!

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Compare this plan with others. We welcome comparison because the GOLD STAR PLAN pays from the very first day (we can't pay any sooner); and it pays forever . . . as long as you remain in the hospital (we can't pay any longer!).

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Money-Back Guarantee

We'll *mail* your policy to your home. No salesman will call. In the privacy of your own home, read the policy over. Examine it carefully. Have it checked by your lawyer, your doctor, your friends or some trusted advisor. Make sure it provides *exactly* what we've told you it does. Then, if for any reason whatsoever you are not fully satisfied, just mail your policy back within ten days, and we'll cheerfully refund your entire premium by return mail, with no questions asked. So, you see, you have *everything* to gain and nothing to lose.

This is the same **GOLD STAR PLAN** as offered in the following leading publications.

- American Agriculturist
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- Dakota Farmer
- Farm Journal
- Farm & Ranch
- Farmer Stockman
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- Life & Health
- National Livestock Producer
- Prevention
- Reader's Digest
- Rural New Yorker
- Workbasket

Plan for Non-Drinkers Only!!

To readers of WORKBENCH

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- Good in any lawfully operating hospital anywhere in the world!
- Pays *in addition* to any other hospital insurance you may carry.
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- No age limit.
- Immediate coverage! Full benefits go into effect noon of the day your policy is issued.
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- Pays whether you are in the hospital for only a day or two, or for many weeks, months, or even years!

- No policy fees or enrollment fees!
- Ten-day unconditional money-back guarantee!
- Every kind of sickness and accident covered except, of course: pregnancy; any act of war; pre-existing conditions; or hospitalization caused by use of alcoholic beverages or narcotics. Everything else IS covered.

HERE ARE YOUR GOLD STAR BENEFITS

Pays $100.00 weekly for life while you are in the hospital.

Pays $2,000.00 cash for accidental death.

Pays $2,000.00 cash for loss of one hand, or one foot, or sight of one eye.

Pays $6,000.00 cash for loss of both hands, or both feet, or sight of both eyes.

OUTSTANDING LEADERS SAY—

DR. DANIEL A. POLING, noted minister and Editor of The Christian Herald: "The advantages of a hospital plan which is available to non-drinkers only are obvious. The lower rate is made possible because you are not paying the bills for the illnesses and accidents of those who use alcohol."

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J. C. PENNEY, Philanthropist, Founder of the J. C. Penney Company: "I have a sincere conviction that liquor is one of the chief causes of unhappiness both to people who drink and to those who are near and dear to them. Early in my life I decided not to touch liquor. I am delighted to know of the De Moss Gold Star Total Abstainers' Plan that provides a premium rate so much lower. This is the way it should be because most automobile and other accidents occur because of drinking."

This plan offered exclusively by

DE MOSS ASSOCIATES, INC.
VALLEY FORGE, PENNA.
"Special Protection for Special People"

HERE'S ALL YOU DO:

1. Fill out application below.
2. Enclose in an envelope with your first payment.
3. Mail to De Moss Associates, Inc. Valley Forge, Pa.

You will receive your GOLD STAR POLICY promptly by mail.
No Salesman will call.

APPLICATION FOR

Gold Star Total Abstainers' Hospitalization Policy

My name is _____ 1-9801-032

Street or RD# _____

City _____ Zone _____ State _____

Date of Birth: Month _____ Day _____ Year _____ Height _____ Weight _____

My occupation is _____

My beneficiary is _____ Relationship _____

I also apply for coverage for the members of my family listed below:

NAME	AGE	HEIGHT	WEIGHT	BENEFICIARY
1.				
2.				
3.				

To the best of your knowledge and belief, have you or any person listed above ever had high or low blood pressure, heart trouble, diabetes, cancer, arthritis or tuberculosis or have you or they, within the last five years, been disabled by either accident or illness, had medical advice or treatment, taken medication for any condition, or been advised to have a surgical operation? Yes _____ No _____

If so, give details stating person affected, cause, date, name and address of attending physician and whether fully recovered. _____

Neither I nor any other person listed above uses alcoholic beverages, and I hereby do apply for a policy with the understanding that the policy will not cover any conditions existing prior to the issue date, and that it shall be issued solely and entirely in reliance upon the written answers to the above questions.

Date: _____ Signed: X _____

FORM GS 713-3

HERE ARE THE LOW GOLD STAR RATES

	IF YOU PAY MONTHLY	IF YOU PAY YEARLY
Each adult age 19-64 pays	$4.	$40.
Each adult age 65-100 pays	6.	60.
Each child age 18 and under pays	3.	30.

SAVE 16 2/3% BY PAYING YEARLY!

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Valley Forge, Penna.

OLD SECURITY LIFE INSURANCE COMPANY
Kansas City, Missouri

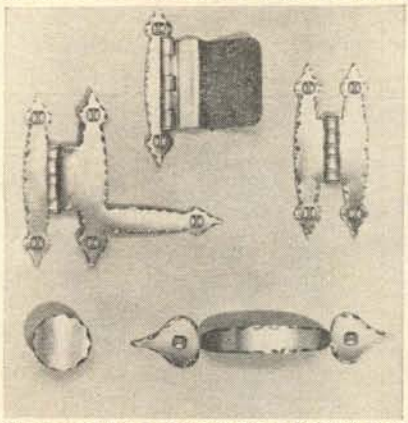
WORLD MUTUAL HEALTH & ACCIDENT INS. CO. OF PENNA.
King of Prussia, Pa.

MAIL THIS APPLICATION WITH YOUR FIRST PREMIUM TO **DE MOSS ASSOCIATES, INC. VALLEY FORGE PENNA.**

Shopping Tips

In communicating with companies whose products are described in this department, please mention WORKBENCH.

Colonial-Cabinet Hardware

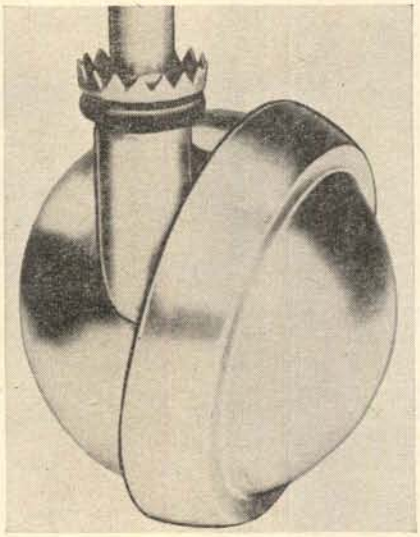


RETAINING THE DISTINCTIVE heart pattern and hammered edges, this new hardware adds a modern satin face that blends well with up-to-date kitchen appliances. Available in Antique Copper and Antique English finishes. See your Amerock supplier or write Amerock Corp., Rockford, Ill.

Free Discount Catalog

DISCOUNT STEREO RECORD AND Tape Catalog with 144 pages lists more than 1600 stereo records, 300 monophonic recordings and some 800 four-track stereo tapes. Talking books, and all types of music are included on all major labels. Catalog No. 211, Allied Radio Corp., 100 N. Western Ave., Chicago 80.

Spherical Caster

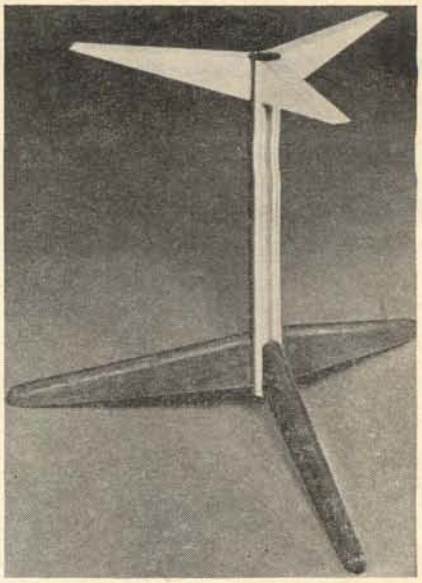


CARPET-SAVING CASTER is 2 in. in diameter, said to swivel instantly, roll easily under maximum load of 60 lbs. per caster. Available at hardware stores in several plated finishes. From $4.95 for set of four. Folder on request from Shepherd Casters, Inc., P. O. Box 672, Benton Harbor, Mich.

Electric-Organ Kit

NEWEST IN THE LINE is this Spinet that weighs less than 100 lbs., has 88 keys and 13 pedals, can be assembled in 50 hrs. Kits used to assemble the organ cost approximately $500. From Schober Organ, 43 W. 61st St., New York City.

Cafe-Table Legs



AVAILABLE IN HEIGHTS of 14, 18 and 29 in., with base sizes of 18, 25 and 35 in., these cafe legs are easily assembled. Fine for making round or square tables, lamps, etc. May be purchased unfinished or with a number of different finishes. For information and prices: Dennix Products Co., 33/10 Downing St., Flushing 54, N. Y.

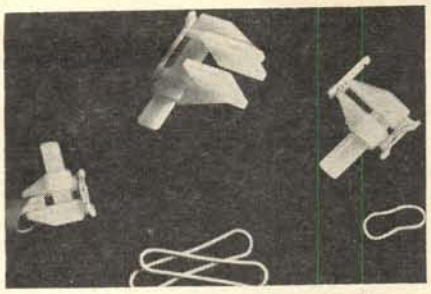
Walk On Water

CORE OF THESE "WATER SHOES" is urethane foam over which is brilliantly-colored fiberglass to provide a smooth, resilient surface. Flippers on the bottom provide traction, prevent backward motion. Water Shoes are $39.95 a pair from sporting-goods stores or from Water Shoes, Inc., 1807 Elmwood Ave., Buffalo 7, N. Y.

Sliding-Door Closer

MEASURING JUST 1½ x 2½ x 4 in. a new device comes complete with track to provide positive, automatic closing of sliding doors. Tension can be adjusted, doors can be locked open in any position. Save fuel or cooling as well as effort. For more information: Adcco Mfg. Co., 2606 N. 7th St., Phoenix, Ariz.

Miniature Clamps



TINY NYLON CLAMPS come in 5 jaw sizes ⅜ in. through 1½ in., are ideal for model making and other small jobs. Table platens included to provide large clamping area. Three small sizes with platens are $1, two larger sizes with platens are $1.29 from Miniclamp, 8 East 27th St., Minneapolis 8, Minn.

Walkie-Talkie Kit

COMPLETELY TRANSISTORIZED two-way radio weighs only 8 oz. with battery when assembled, has a range of up to one-half mile. Assembly requires only soldering iron and screw driver. Two units cost just $29.95, about half the cost of finished units. Electrosolids Corp., 12740 San Fernando Rd. North, Sylmar, Calif.

Learn TV Repair

START REPAIRING TV SETS in just a week with this special course. No knowledge of electronics required. For free sample lesson write TV Servicing Systems, 1038 S. La Brea, Dept. WBEP, Los Angeles, 19.

BUILD WITH CRAFTPLAN PATTERNS

HUNDREDS OF THINGS to do and make FOR FUN AND PROFIT

New! COLONIAL SPINNING WHEEL Authentic design. Full-size. Use for actual spinning. No. 379, $2.00.

DOLL HOUSE PLANS Complete details 6 different houses . . . Calif. style, Colonial, English, etc. Cat. No. 364 . . . $1.50.

DOLL HOUSE FURNITURE For houses covered by above plans. No. 365 . . . $1.50.

22 KITES How to build all kinds . . simple 2-stick, to giant 5 footer. No. 354 . . $1.50.

PENNA. DUTCH DESIGNS 93 full-size patterns: invaluable for hobbyists, decorators. No. 353 . . . $1.50.

HOW TO MAKE ALL KINDS OF CANDLES. Practical how-to information. No. 352 . . $1.00.

47 DESIGNS CANDLESTICKS, CANDELABRA, you can make. No. 328 . . $1.50.

OLD ENGLISH LETTERING Patterns 2, 4" high. Caps, small letters, numerals. No. 355 . . $1.50.

15 ACTION WINDMILLS Galloping horse, bull chasing farmer, etc. Full-size patterns. No. 313 . . $1.00.

HOME BARS—How to make snack, portable, built-in bars. No. 200 . . $1.00.

SIX DESK PLANS Desks for all purposes. Six fine designs. No. 371, $1.50

GIANT CIRCUS PINUPS —up to 22 in. high. Pinups made of thin plywood, painted gay colors, delight youngsters. No. 314 . . $1.

15 OUTDOOR FIREPLACES —Full details. No. 204 . . $1.00.

15th Century WOODEN WHEEL CLOCK New! Wonderful conversation piece. Single hand indicates hours, fractions. Surprising in simplicity. Full-size patterns all parts. No. 372 . . $1.50

157 SILHOUETTE DESIGNS Great variety of subjects. Professional quality art. No. 349 . . $1.50.

24 PIECES OUTDOOR FURNITURE Chairs, tables, benches, folding, roll-about. Modern designs. No.348 . . $1.50.

30 LAWN NOVELTY CUTOUTS Unusually cute designs. Full-size patterns. No. 347, $1.50.

Use Craftplans to make things for FUN and to SELL.

NATIVITY SCENE Dramatic presentation of Nativity Scene . . rich in beauty and color. Creche height 8 ft. Full-size patterns all figures. No. 370 . . $2.00

ELECTROPLATING BABY SHOES and OTHER NON-METALLIC OBJECTS. Also, how to plate with copper, nickel, chromium, zinc. No. 362 . . $1.00

16 DESIGNS, GUN, FISHING GEAR RACKS, CABINETS Store SAFELY Shotguns, Rifles, Handguns; also fishing rods, lures, etc. No. 344 . . $1.00.

16 WHATNOT SHELVES, WALL RACK Latest fashions in wall decor. All patterns full-size. No. 342 . . $1.00.

UNUSUAL BIRD HOUSES 16 Designs. Want bird houses that are completely different: if so, don't overlook these plans. No. 341 . . $1.

New! Make your own DUCK DECOYS Mallard, Pintail, Canvasback. Full-size patterns. No. 373, $1.00.

New! HOW TO PROTECT AND PATENT AN INVENTION. No. 377, $1.00.

17 UNUSUAL ALPHABETS 2" high. Novel Lettering patterns you can use. #336 $1.50

SCRIPT LETTERING — 8" high. Full-size patterns. A to Z—Caps, small letters, numerals. No. 335 . . $1.50.

BLOCK LETTERING — 12" high. Alphabet Caps, numerals. No. 334 . . $1.50.

BLOCK LETTERING 4, 8" high. Alphabet, numerals. No. 333 . . $1.50.

GIANT A TO Z LETTERING 24" high. Complete alphabet. No. 329 . . $1.50.

LETTERING PATTERNS. 5 Distinctive Alphabets—2, 3" high. Caps, small letters, numerals. 282. $1.50.

20 SERVING TRAY DESIGNS Tray for every occasion. No. 332 . . $1.00.

69 WOOD LATHE PROJECTS—No. 331 . . $1.50.

30 SMART LAMPS How to make lamps like you find in smart shops. No. 308 . . $1.50.

ETCHED ALUMINUM TRAYS 12 designs, complete how-to-make details. No. 367 . . $1.50

EDUCATIONAL TOYS — 14 different. No. 324 . . $1.00

$6.00 WORTH OF PLANS FOR $5

If price of plans you order is $5.00 we'll include without extra charge another dollar's worth of plans of your selection. If price of plans selected is $10 you get $2.50 worth of Free plans. Your money back if you're not satisfied.

Please note

18 DECORATOR STYLES, MODERN WALL CLOCKS Designs compare favorably with clocks selling for up to $50. No. 326 . . $1.00.

ELI TERRY CLOCK With Wood Gears. All details and patterns needed to duplicate famous original made in 1794. No. 325 . . $1.50.

New! How to Make and Use an ABACUS (Chinese calculator that uses beads). No. 378, $1.

24 GADGETS FOR SMOKERS Pipe racks, cigarette dispensers, smoking stands, etc. No. 323 . . $1.00.

MIDGET CARS Powered by small gas engines. Two designs — racer, Jeep. No. 322 . . $1.00

New! CARVING ANIMAL CARICATURES Tricks of making delightful little carvings. No. 375, $1.

HOME IMPROVEMENTS (Outdoor). Plans on year-'round awnings, garage cupola, Dutch windmill, 57 trellises, fences, storm windows, etc. No. 309 $1.50.

HOME IMPROVEMENTS (Indoor). How to make cornices, kitchen cabinets, bookcase units, modernize basement, attic, etc. No. 318 . . $1.50.

CHOIR BOYS ORGANIST New! Motorized. Organist sways to and fro. 5 ft. 5 in. high. Very colorful. Full-size patterns. No. 369 . . $2.00

EARLY AMERICAN REPRODUCTIONS New! Complete details 12 fine pieces — cobbler's bench, hutch tables; cranberry scoop magazine rack, ratchet lamp, etc. No. 363. $1.50

20 THINGS TO MAKE FOR CHILDREN Novel, practical projects. No. 207 . . $1.00.

14 more ACTION WINDMILLS Cop swinging arms, flying duck, Indian rowing, etc. No. 293 . . $1.00.

New! MIRROR SILVERING. Easy step-by-step procedure. No. 374, $1.00.

CAROL SINGERS OUTDOOR HOLIDAY DISPLAY Singinest kids you ever saw. 47 in. high. Easy to make from plywood. Full-size patterns. No. 310, $1.

New! BONSAI-GROWING DWARF TREES "Secrets" practiced by Japanese for centuries. No. 368 . . $1.00

MAGAZINE RACKS All details needed to make 8 racks of attractive design. No. 307 . . $1.50.

RELIGIOUS MOTTOES Full-size patterns, 8 inspiring mottoes, beautifully lettered Lord's Prayer. No. 306 . . $1.00.

God bless our Home

129 JIGSAW PROJECTS Great variety of things to make on jigsaw. No. 305 . . $1.00.

17 PIECES FINE LAWN FURNITURE Designed for comfort, sturdiness. No. 304 . . $1.50.

COSTUME JEWELRY Full-size patterns 482 lapel pins, brooches, name pins, alphabets, etc. No. 302 . . $1.00.

22 RACKS, CABINETS, KITS, for Sewing Accessories. Useful, easy-to-make projects. No. 301. $1.

27 DISTINCTIVE SHELVES, SHADOW BOXES Patterns, details on 19 attractive shelves, 8 shadow boxes. No. 300 . . $1.50.

MODERN WOOD FINISHING INSTRUCTIONS. No. 235 . . 50c.

18 Designs for WEATHERVANES. No. 269 . . $1.00

22 LAWN NOVELTIES Have artistic touch not ordinarily found in such projects. Full-size patterns. No. 299 . . $1.50.

KEEP OFF

15 FAST-ACTION TOYS All patterns full-size. No. 294, $1.

15 HANDSOME TABLES— Well-designed cocktail, coffee, end, lamp. Full details. No. 288 . . $1.00.

14 COLORFUL FLOWER BOXES Full-size patterns 14 nifty boxes for potted plants. No. 278 . . $1.

16 BOOK END DESIGNS Wonderful assortment. No. 274, $1.

GARAGE PLANS — Build Own 1, 2-car. No. 327 . . $1.50

27 BIRD HOUSES, FEEDERS Small wren house to large colony house for martins. No. 253 . . $1.00.

New! BAR-B-Q (Life of the Party) APRONS Seven designs, full-size patterns. Decorate with textile paints. No. 376. $1.50.

13 STURDY WORKBENCHES Complete plans. No. 211 . . $1.00

13 Designs WOOD INLAY PICTURES . . No. 315 . . $1.00

HOW TO ORDER: Send list of plans selected. Remit by check, money order, postal note, U.S. or Canadian bills. Order Today!

We pay shipping charges. All plans sent on MONEY-BACK GUARANTEE.

CRAFTPLANS DEPT. F-43, 1322 S. WABASH, CHICAGO 5

NURSERY STOCK SALE!

EVERY PLANT WILL BE LABELED
Planting Instructions Included With Each Order

FLOWERING SHRUBS BLOOMING SIZE	
Red or White Crape Myrtle, 1 to 2 ft.	$ .69 ea.
Yellow Weigela, 1 to 2 ft.	.29 ea.
Pink Azalea, native collected, 1 to 2 ft.	.29 ea.
Spice Bush, 1 to 2 ft.	.19 ea.
Hypericum Yellow, native collected, 1 to 2 ft.	.15 ea.
Red Weigela, 1 to 2 ft.	.19 ea.
Pink Weigela, 1 to 2 ft.	.12 ea.
Spirea Van Houttei, 1 to 2 ft.	.15 ea.
Althea Double Red or Purple, 1 to 2 ft.	.12 ea.
Weigela Variegated, 1 to 2 ft.	.12 ea.
Deutzia, White, 1 to 2 ft.	.10 ea.
Forsythia Yellow, 1 to 2 ft.	.12 ea.
Pink Spirea, 1 to 2 ft.	.15 ea.
Pink Flowering Almond, 1 to 2 ft.	.39 ea.
Tamerix, Pink Flowers, 1 to 2 ft.	.39 ea.
Red Bush Honeysuckle, 1 to 2 ft.	.19 ea.
Red Flowering Quince, 1 to 2 ft.	.29 ea.
Persian Lilac, 1 to 2 ft.	.19 ea.
Hydrangea P.G., 1 to 2 ft.	.19 ea.
Mockorange, 1 to 2 ft.	.10 ea.
Sweet Shrub, 1 to 2 ft.	.15 ea.
Rose of Sharron, mixed colors, 1 to 2 ft.	.09 ea.
Red Ozier Dogwood, 1 to 2 ft.	.10 ea.
Pussy Willow, 1 to 2 ft.	.19 ea.
Hibiscus Mallow Marvel	.09 ea.
Russian Olive, 1 to 2 ft.	.19 ea.
Red Barberry, 1 to 2 ft.	.29 ea.
White Althea, 1 to 2 ft.	.12 ea.
Japanese Snowball, 1 to 2 ft.	.59 ea.
Red Snowberry, 1 to 2 ft.	.10 ea.
Spirea Anthony Water Dwarf-Red, 1 ft.	.49 ea.
White Snowberry, 1 to 2 ft.	.29 ea.
Spirea Thumbergii, 1 to 2 ft.	.29 ea.
French Lilac Red or White, 1 to 2 ft.	.98 ea.
FLOWERING TREES	
Magnolia Grandiflora, 1 to 2 ft.	.98 ea.
Dwarf Red Buckeye, ½ to 1 ft.	.49 ea.
Mimosa Pink, 3 to 4 ft.	.19 ea.
American Red Bud, 2 to 3 ft.	.19 ea.
White Flowering Dogwood, 3 to 5 ft.	.29 ea.
Pink Flowering Dogwood, 2 ft.	.98 ea.
Golden Chain Tree, 1 to 2 ft.	.69 ea.
Smoke Tree, 1 to 2 ft.	1.49 ea.
Purple Leaf Plum, 2 to 3 ft.	.49 ea.
Red Flowering Peach, 2 to 3 ft.	.49 ea.
Red Flowering Crab, 2 to 3 ft.	.69 ea.
Golden Rain Tree, 1 to 2 ft.	.39 ea.
White Flowering Peach, 2 to 3 ft.	.49 ea.
Chinese Red Bud, 1 ft.	.69 ea.
Tulip Poplar, collected, 2 to 3 ft.	.19 ea.
European Bird Cherry, 3 to 4 ft.	.98 ea.
May Day Tree, 3 to 4 ft.	.98 ea.
Double-Pink Flowering Cherry, 3 to 4 ft.	2.49 ea.
SHADE TREES	
Silver Maple, 3 to 4 ft.	.19 ea.
Weeping Willow, 3 to 5 ft.	.39 ea.
Chinese Elm, 3 to 4 ft.	.25 ea.
Catalpa Fish Bait Tree, 2 to 3 ft.	.19 ea.
Ginkgo Tree, 1 to 2 ft.	.39 ea.
Ginkgo Tree, 3 to 4 ft.	1.59 ea.
Lombardy Poplar, 3 to 5 ft.	.18 ea.
Sycamore, 2 to 3 ft.	.19 ea.
Pin Oak, 2 to 3 ft.	.69 ea.
White Ash, 2 to 3 ft.	.19 ea.
Sugar Maple, collected, 3 to 5 ft.	.39 ea.
Norway Maple, 2 to 3 ft.	.98 ea.
Kentucky Coffee Tree, 1 to 2 ft.	.69 ea.
Sweet Gum Tree, 1 to 2 ft.	.19 ea.
White Birch, 2 to 3 ft.	.49 ea.
Japanese Maple, 1 to 2 ft.	.98 ea.
Crimson King Maple (Patent No. 735), 2 to 3 ft.	2.49 ea.
FRUIT TREES	
Belle Georgia Peach, 2 to 3 ft.	.39 ea.
Elberta Peach, 2 to 3 ft.	.39 ea.
J. H. Hale Peach, 2 to 3 ft.	.39 ea.
Stayman Winesap Apple, 2½ to 4 ft.	.59 ea.
Red Delicious Apple, 2½ to 4 ft.	.59 ea.
Yellow Delicious Apple, 2½ to 4 ft.	.59 ea.
Montmorency Cherry, 2 to 3 ft.	.89 ea.
Kieffer Pear, 2 to 3 ft.	.89 ea.
Methley Plum Blue, 2 to 3 ft.	.59 ea.
Damson Plum, 2 to 3 ft.	.59 ea.
Burbank Plum, 2 to 3 ft.	.59 ea.
Apricot, Moorpark, 2 to 3 ft.	.49 ea.
5-N-1 Apple, 5 different varieties on each tree, 3 to 4 ft.	2.49 ea.
VINES	
Red Scarlet Honeysuckle	.29 ea.
Wisteria Purple	.39 ea.
Bitter Sweet	.19 ea.
Clematis Vine, collected	.19 ea.
Concord Grape Vine	.39 ea.
Trumpet Creeper, collected	.09 ea.
NUT TREES	
Hazel Nut, 2 to 3 ft.	.69 ea.
Shell Bark Hickory, 1 to 2 ft.	.69 ea.
Black Walnut, 1 to 2 ft.	.39 ea.
Butter Nut, 1 to 2 ft.	.49 ea.
Chinese Chestnut, 1 to 2 ft.	.69 ea.
Hardy Pecan Seedlings, 1 to 2 ft.	.69 ea.
EVERGREENS	
Glossy Abelia, ½ to 1 ft.	.15 ea.
American Holly, collected, ½ to 1 ft.	.19 ea.
Short Leaf Pine, native collected, 1 to 2 ft.	.19 ea.
Mountain Laurel, native collected, 1 ft.	.29 ea.
Rhododendron, native collected, ½ to 1 ft.	.39 ea.
Iris Juniper, ½ to 1 ft.	.39 ea.
Pfitzer Juniper, ½ to 1 ft.	.39 ea.
Christmas Ferns, collected	.19 ea.
Canada Hemlock, collected, 1 ft.	.19 ea.
Cherry Laurel, ½ to 1 ft.	.29 ea.
Nandina, 1 ft.	.39 ea.
Boxwood, ½ ft.	.39 ea.
STRAWBERRY PLANTS	
50 Blakemore Strawberry	1.49
50 Tennessee Beauty Strawberry	1.49
HEDGE PLANTS	
50 Multiflora Rose, 1 to 2 ft.	2.49
100 South Privet, 1 to 2 ft.	.98
25 North Privet, 1 to 2 ft.	1.98
25 California Privet, 1 to 2 ft.	1.98

Satisfaction guaranteed on arrival or we will either replace or refund your money. You may order as many or as few plants as you wish. Orders in the amount of $4.00 or more postpaid. Orders under $4.00 send 40 cents extra with order for postage and packing. NOTICE FREE—orders in the amount of $3.00 or more you get 2 Flowering shrubs FREE our choice. Orders in the amount of $5.00 or more, you get 2 Flowering shrubs, and 2 Flowering Trees FREE our choice. Send your order now. Tell us when you want shipment.

SAVAGE FARM NURSERY
P. O. BOX 125-WW McMINNVILLE, TENNESSEE

SHOPPING TIPS

Electric Can Openers

WHEN MODERNIZING your kitchen, consider that most modern and convenient of appliances, the electric can opener. They open all sizes and shapes of cans. "Can-O-Matics" by Rival Mfg. Co., 36th and Bennington, Kansas City 29, Mo.

Baby-Shoe Bronzing Kit

KIT CONSISTS of 2 bottles of liquid, brush applicator, bronze and set of instructions. So easy a child can do it. Satisfaction guaranteed or money back. $3.99 ppd. from Bronzette, 1729 Gateway, San Diego 5, Calif. California residents add sales tax.

Moon Model

MADE OF WASHABLE PLASTIC this replica of the moon shows in relief 30,000 formations—peaks, craters, etc. With proper lighting the model shows moon phases, produces spectacular effects when exposed to "black light." To order clip check or money order for $12.50 to this item and mail to Edmund Scientific Co., Barrington 72, N. J.

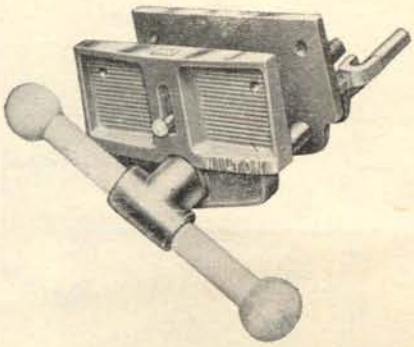
"Mosaic-Style" Glass

EACH KIT CONTAINS 9 bake-on paints, thinner, brush, easy-to-follow directions. Paint is applied to special glass, baked in kitchen oven. Three different kits available at $2.49 each. Douglas Plymouth Corp., Manitowoc, Wis.

Reuseable Sandpaper

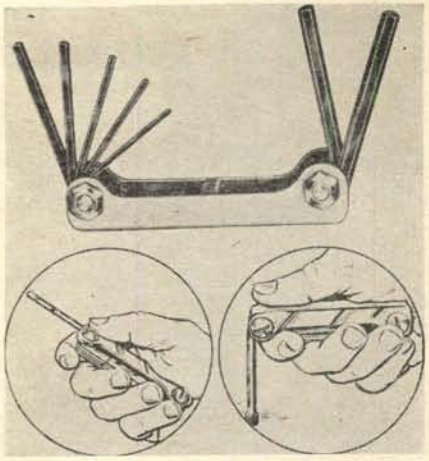
CLAIMED TO LAST nine times longer than ordinary sandpaper, this paper consists of quality grits bonded to Mylar backing. Flex-I-Grit is cleaned by flexing, will not break down when wet. Cost is 49 cents for five-sheet package wherever do-it-yourself material is sold. Made by Manhattan Rubber Div., Raybestos-Manhattan, Inc., Passaic, N. J.

Woodworking Vise



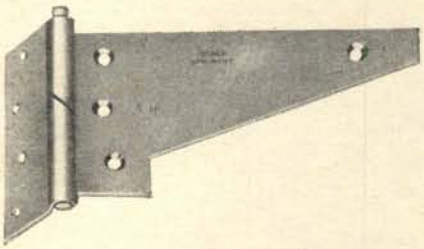
COMPACT, ECONOMY-PRICED vise has 3 x 6½-in. jaws, open to 7 in., will fit on bench tops up to 2¼ in. thick. For more information: Wilton Tool Mfg. Co., 9525 Irving Park Rd., Schiller Park, Ill.

9-In-1 Wrench Set



NO BIGGER THAN a pocket knife, this set of tools in a handle will take care of 9 sizes of recessed-socket head screws. Other sets in this line will handle straight and cross-type slotted screws. At your hardware store or from Eklind Tool & Mfg. Co., 2627 N. Western Ave., Chicago 47.

Gate-Closing Hinges



AVAILABLE AS A T-HINGE, strap hinge or combination T or strap with butt leaves, these gate hinges are self-closing, will not readily permit a gate to be blown open. In various sizes, and right and left-hand versions from Becker Spira-Lift Hinge Co., 1007¼ N. Rowland Ave., El Monte, Calif.

Portable Arc Welder

FULL 125 AMPERE WELDER weighs only 45 lbs., measures 9 x 12 x 16 in. Major features are fan-cooled transformer and tape-wound core that eliminates buzzing usually produced by stacked laminations. Price is $125; for further information write Bren/Weld Sales, Inc., 5114 Third Ave., Brooklyn 20, N. Y.

Here's why a Sharpening Business built on FOLEY EQUIPMENT earns More Money for you!

If others can do it, so can you. And Foley has a long history of people just like you who started sharpening saws part-time at home and who now own prosperous sharpening shops. Foley automatic sharpening equipment has the skill to do a perfect job every time built right into it—no "human error". Your reputation grows as a professional craftsman with every blade you sharpen. You work better, faster, and make more money. The "Foley Plan" for success in the sharpening business helps to assure you plenty of work. It has been developed through years and years of experience. Send the coupon below for your free copy of "*Money Making Facts*".

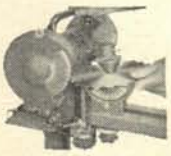
Your Foley Equipment grows with you—
from Part-Time saw filing to Complete Shop!

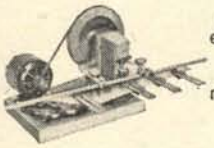
200 AUTOMATIC SAW FILER

Automatic, professional sharpening of hand saws, crosscut circular saws, band saws and combination circular saw blades.

314 GRINDER

Sharpens all types of circular saws—rip, crosscut or combination toothed—from 5" to 44" in diameter. Attachments available for a variety of other sharpening jobs, too.





RETOOTHER

Cuts a full set of teeth, either rip or crosscut, in less than a minute. Operated either by motor or by hand crank.

MODERN LAWN MOWER SHARPENER

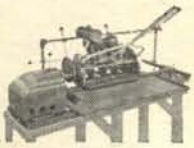
The complete shop in one machine. Accurate to 1/1000th of an inch. No hand filing necessary—blades are precision ground to their extreme edges.

POWER SETTER

Automatically sets band saws up to 1½" in width, as well as all carpenters' hand saws, either rip or crosscut. Available in two models.

FOLEY LAWN MOWER SHARPENER

Sharpens both hand and power reel-type mowers. Automatically sharpens reel blades and cutter bar together—perfect contact along the entire length.



FOLEY MANUFACTURING COMPANY

440-2 Foley Bldg. • Minneapolis 18, Minnesota

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☐ "Money Making Facts" ☐ Automatic Saw Filer ☐ Automatic 314 Grinder
☐ Automatic Retoother ☐ Modern Lawn Mower Sharpener
☐ Automatic Power Setter ☐ Foley Lawn Mower Sharpener

Name_____

Address_____

City_____ State_____

YOUNG AMERICA GARDENS CONTEST

The "Young America Gardens" Contest for 1962 begins this month. It is sponsored by the Flower & Garden Foundation, a non-profit organization established to awaken public interest in gardening, community improvement through horticulture, and more especially, to encourage young people to learn the profits and pleasures of gardening.

This year's contest will have two major divisions—Individual and Club. In the Individual Division there are three groups: Pre-Teen (ages 5 through 12), Teen (ages 13 through Junior in High School), and College (High School Senior through College). The Club Division is open to all organized Clubs such as 4-H, Junior Garden Clubs, Boy or Girl Scouts, Campfire, Brownies, School Clubs and Cub Scouts.

PRIZES

Hundreds of Merchandise prizes and gift certificates will be awarded winners in the two divisions. Each college group first-place winner receives a $100 scholarship to the school of his choice. Engraved plaques will be awarded first-, second-, and third-place winners in each group or division.

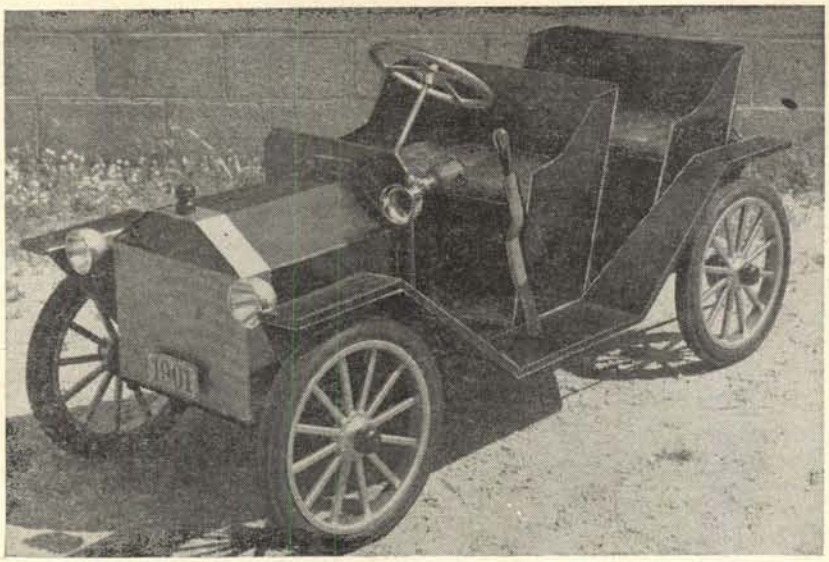
PROJECTS

Club projects must be carried out by the membership of the club. Individual projects cannot be a part of a club project. Any type of gardening project may be chosen, such as plant hybridization, grafting, gift plants for shut-ins, window boxes, vegetable gardening, landscaping, raising flowers, growing under artificial light or any gardening idea that you believe is worth while.

HOW TO ENTER

Visit your LOCAL GARDEN SUPPLY DEALER. He will have entry blanks and rules of the contest for you. Also, he can give you some suggestions for projects and advice on carrying them out. If your LOCAL GARDEN SUPPLY DEALER does not have the materials on the contest, send his name, along with your own, to the Foundation. We will notify him of the contest so that he may participate. Additional information may be obtained by writing:

THE FLOWER AND GARDEN FOUNDATION
BOX 357
ROSEDALE STATION
KANSAS CITY 3, KANSAS



1. Half-scale replica of 1901 touring car will delight youngsters, bring a touch of nostalgia to Dad and the older folks.

2. Home-shop electric welder will handle necessary welding, or welding shop will do the work for just a few dollars.

ANTIQUE AUTO

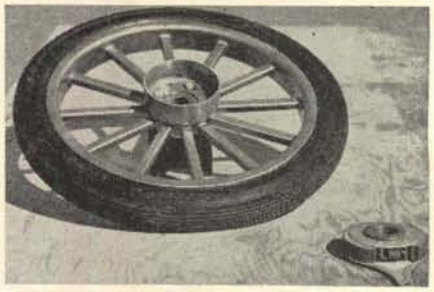
Half-Scale Replica of 1901 Touring Car

GEORGE E. JONES

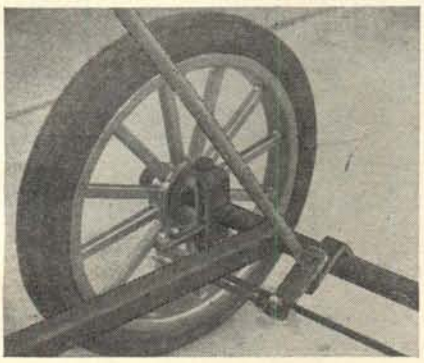
THIS DELIGHTFUL LITTLE CAR of the horseless-carriage age, Fig. 1, and the cover, will let the younger drivers of the family whiz around the neighborhood at a sizzling 5 m.p.h. with three chums aboard, and do it all day on one battery charge. Construction is simple and can be handled in any home workshop. Parts that are difficult to make, such as wheels, brakes, ball joints, etc., can be purchased.

Start construction with the frame, Fig. 7. Cut the 1-in.-sq. tubing to length and file curved notches in the ends to receive the axles. If you have decided to make the axles, rather than buy them, do them next. Hacksaw the spindle yokes to length and bend them to shape in a vise. Drill the ½-in. holes for the king bolts after the yokes are bent. Cut the front axle and weld the yokes to the ends, centering them on the axle parallel to each other. Position the axle on the frame side members and weld it in place, Fig. 2. Cut the steering-column perch, drill a ½-in. hole in it and weld it to the front axle, Fig. 3.

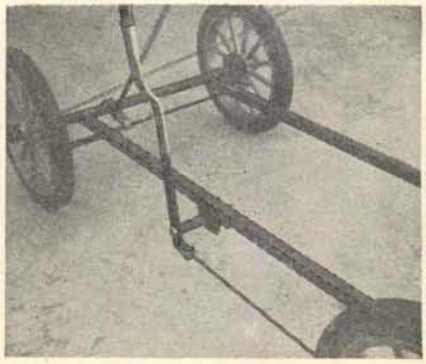
Cut the rear axle and butt-weld the cap screws to the ends. Weld this assembly to the frame rails.



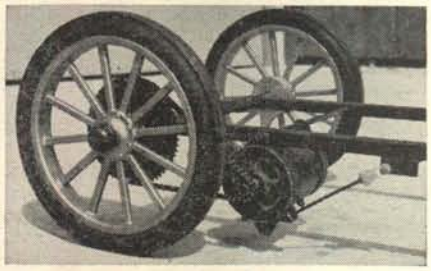
5. Wheels available from supplier can be fitted with 3½-in. Morse internal-expanding brakes; used on rear only.



3. Closeup shows arm welded to bottom of steering column, bracket welded to front axle to support end of column.

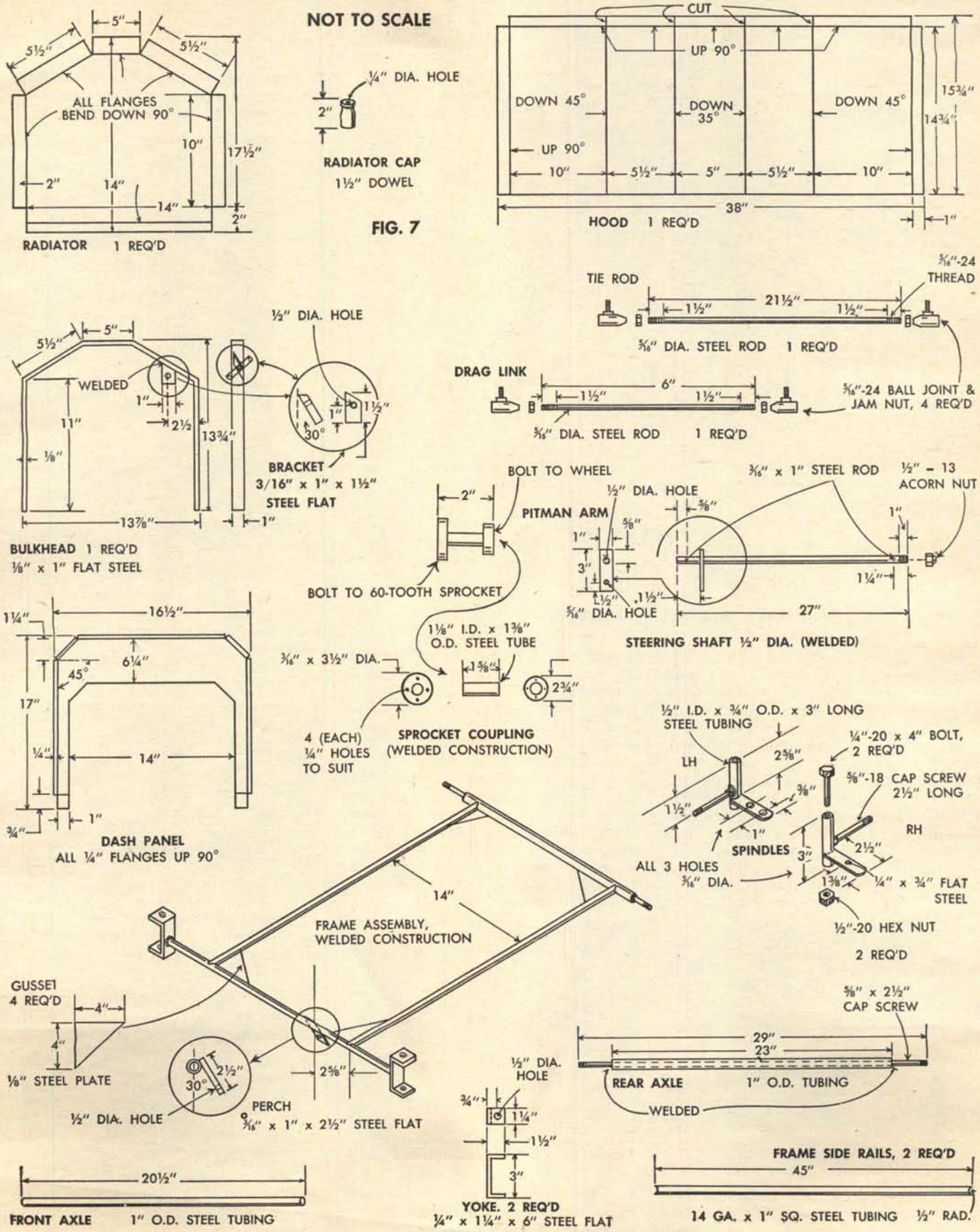


4. Brake handle is fitted on spacer to position it outside of body so it projects up through running board.



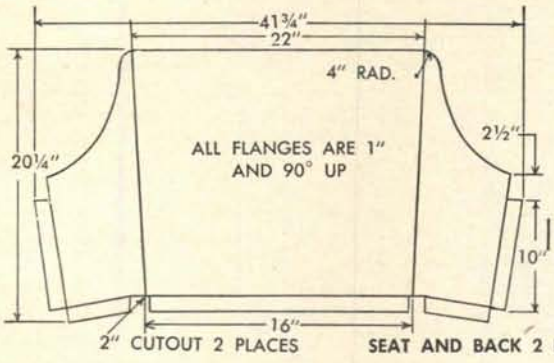
6. Shown in this photo are positions of electric motor, support, sprockets and chain. Brake is visible on far wheel.

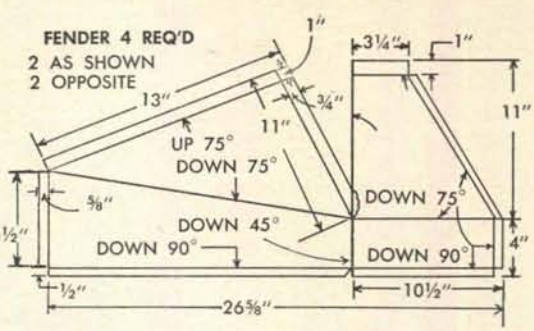
Make the four gussets, Fig. 7, and weld them to the underside of the frame at the corners. Fabricate the front-wheel spindle assemblies, Fig. 7. Drill 5/16-in. holes in the arms first. Make the brake-handle bracket and attach it to the left side of the frame, Fig. 4. Cut the floor pan and make notches in it for the bulkhead legs, steering column and brake handle. Now, cut all rods to length and thread them: Drag link, tie rod, motor-hanger rod, brake rod, motor-adjusting rod and steering column, Fig. 7. Weld the pit-

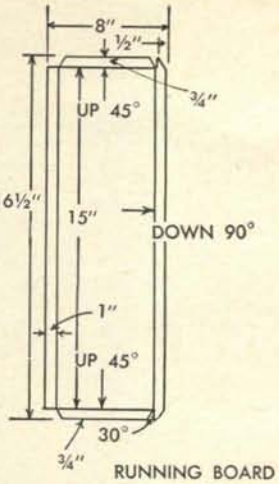


man arm to the steering column 1½-in. from the end. Assemble the ball joints on the tie rod and drag link. Bolt the ball joints to the spindle arms. Make the sprocket coupling next.

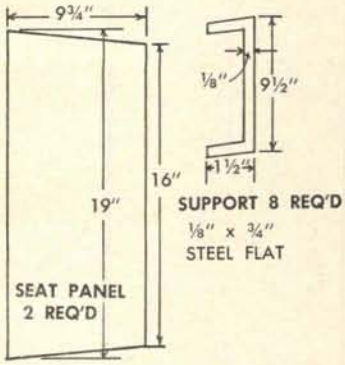
Clean off all grease, rust and weld spatter from the frame and paint it with metal primer, then one coat of flat-black enamel. When the paint has dried, put on the front wheels, backing off the castelated nuts ¼ turn from snug so the wheels spin freely. Pin the nuts with a cotter pin. Adjust the ball

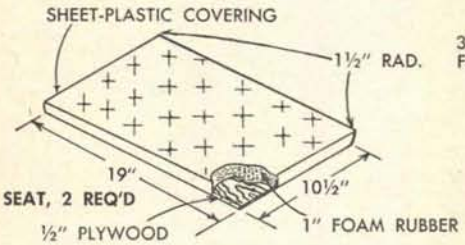


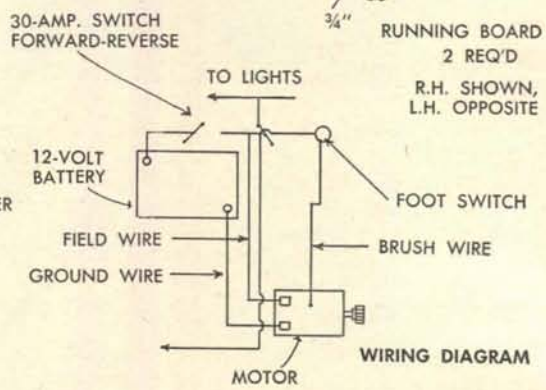


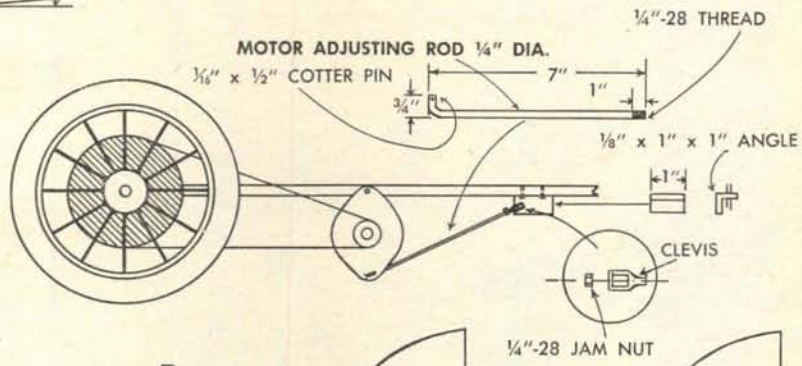


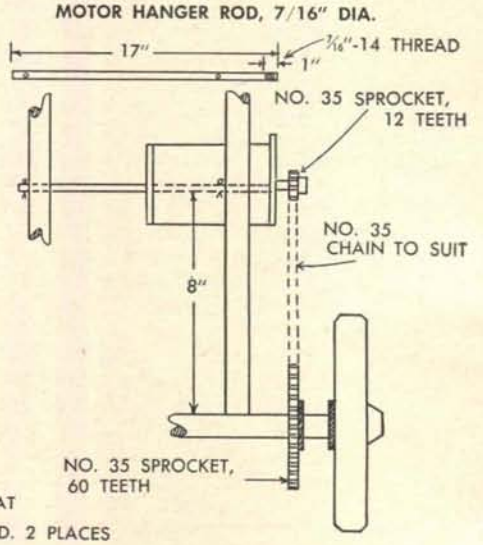
NOT TO SCALE

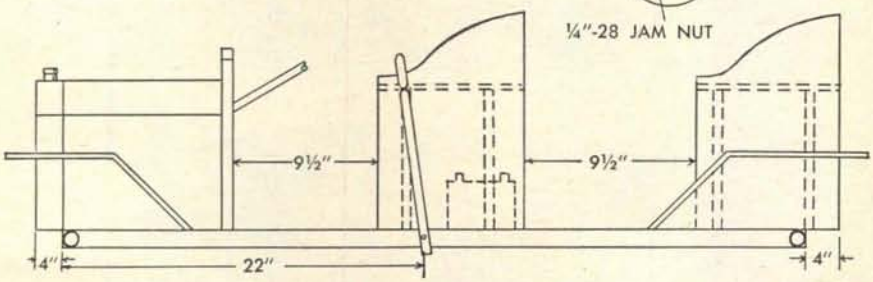


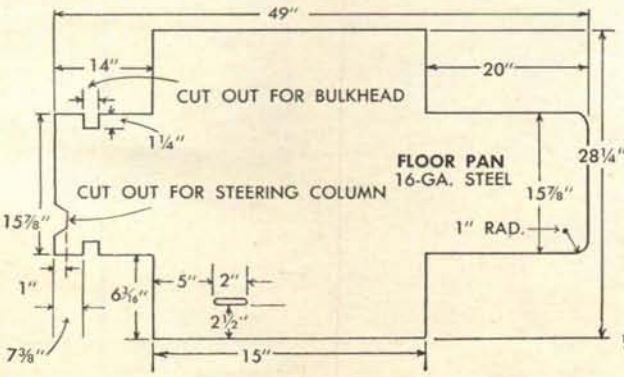


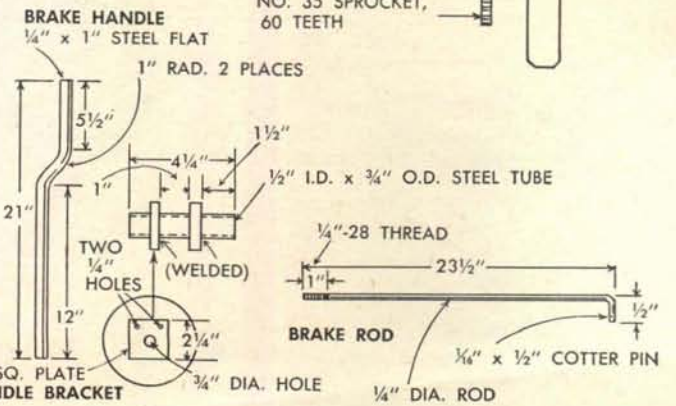


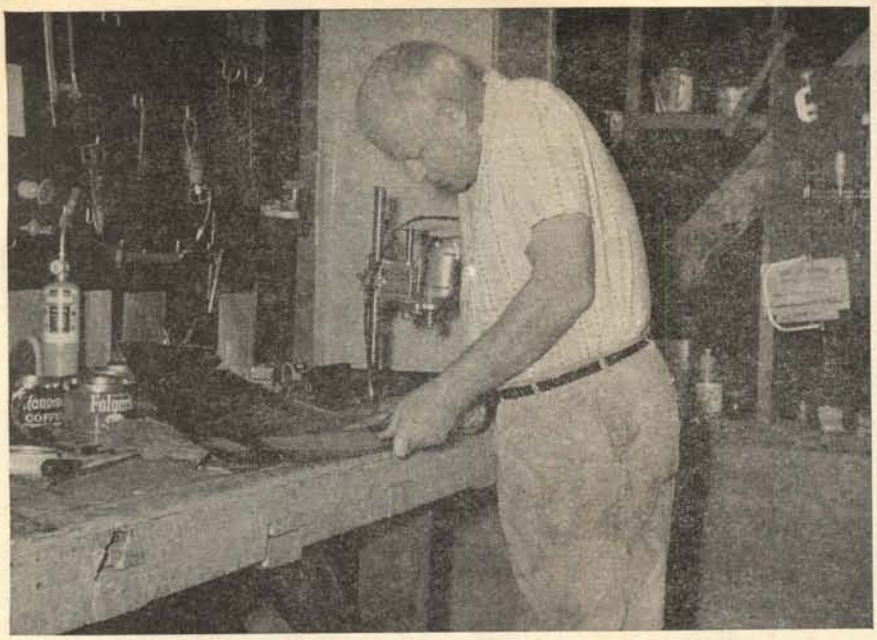












8. Parts for the car body are easily cut and formed with ordinary hand tools. Here fender is being cut to shape.

joints on the tie rod to produce 1/16-in. toe-in for the front wheels.

Bolt the brake drum to the left rear wheel, Fig. 5, and mount the brake-shoe assembly on the axle. Snug up the wheel with a castelated nut and lock with a cotter pin. Put on all hub caps. The right rear wheel is the drive wheel on which is bolted the 60-tooth sprocket, Figs. 6 and 7. Bolt the wheel to the axle, lock with cotter pin.

The power plant for the car can be a converted electric gear motor, a government-surplus item selling for about $16 to $20. It will run on 6 or 12 volts and is fully reversible. Burden Sales Co., 900 West "O" St., Lincoln, Nebraska, has many types of these motors in stock. Your power plant also can be a regular 2- or 3-brush auto generator. To convert the generator, remove the third brush if it has one and leave the grounded brush as is. The wire from the other brush goes to an outside terminal. The fields are solder-connected and wires from the two fields are led to an outside terminal. Most auto shops can make the conversion.

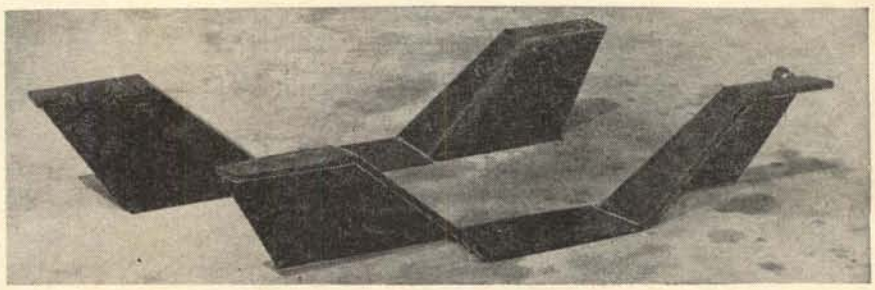
Position the motor on the hanger rod inserted through holes in the frame. Align the two sprockets and install the chain. Mount the motor rod to the motor and to the frame and adjust its length so there is ½-in. slack in the chain between sprockets. Next, bend the brake handle to suit arm length, Fig. 7, and drill the rod and pivot holes. Do not install the handle.

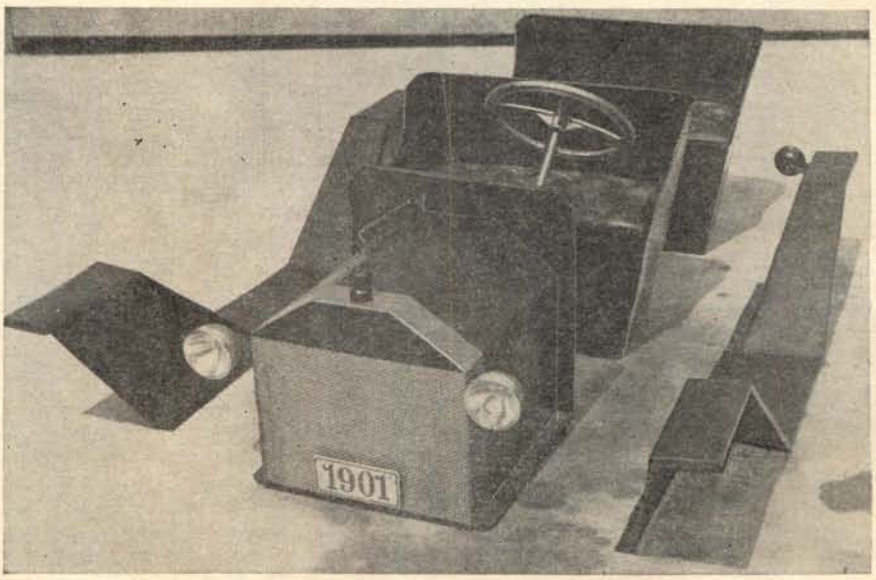
Cut all parts of the body, Fig. 8, then use a couple of lengths of 2 x 4 clamped together to make all bends. Put all sub-assemblies, Fig. 9, together. Assemble radiator, hood, dash and bulkhead as one unit, Fig. 10. Paint *all body sub-assemblies* with a coat of metal primer, then a coat of glossy black enamel. Wheels can be gold or red.

Now, the final assembly: Position the floor pan; install the hood assembly, the fender assemblies and steering column. Fit the brake handle through the running-board slot and adjust it to the brake rod. Wire the motor to the battery and floor accelerator. The battery is located under the front seat, held by brackets fabricated to suit the battery size. Fasten all components with rivets or sheet metal screws.

Hop in the car, flip the dash switch to forward and step down on the accelerator. You are under way for years of fun. Twenty-four parts and accessories for the car can be purchased from: Ma-Jo Lektri-Kars, P. O. Box 3134, Glen-Oaks Station, Burbank, Calif. Write for a parts list. △ △

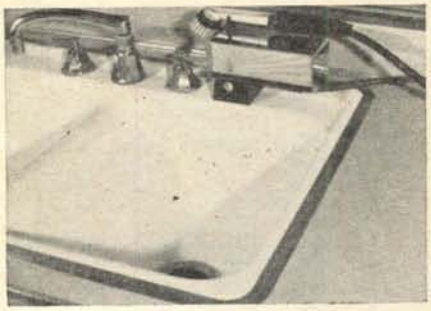
9. One template is used to make all four fenders. Two, of course, are reversed in bending to produce pairs.





10. Shown are all sheet-metal components ready for assembly on the chassis. Black is the color of the original.

Spray-Brush Dishwasher



THIS HANDY DISHWASHER replaces the spray hose of a kitchen sink, and can be installed in minutes. An adapter with the kit replaces the original spray head, permits connecting the hose to the dishwasher. Detergent and water is supplied from a tank in the unit. Pressing the button on the spray head produces a spray of detergent and water; releasing the button produces clear water. To actuate the unit, water is turned on and the valve on the unit is pulled out. This diverts water from the faucet to the unit. Shutting off the water causes the valve to shut off automatically. The unit does a fast job of washing the dishes, lets the housewife use hotter water than she can in a dishpan. Also ideal as an auxiliary wash unit with an automatic dishwasher to clean up those especially soiled or encrusted pots, pans and bowls that an automatic unit cannot handle. For information: Princess Dishwasher, Manville Mfg. Corp., Pontiac, Mich. △ △

MAKE YOUR OWN WOOD NATURE TILES

With Colorful Leaves, Flowers, Butterflies Permanently Preserved in Castoglas

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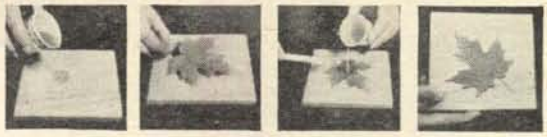
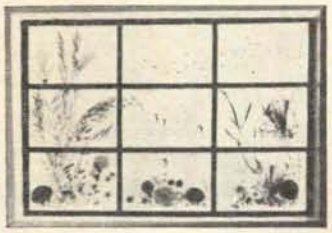
How You Can Make These Tiles. The four photos below illustrate the simple ABC's of the casting method. Apply Castoglas and Hardener to a clean piece of wood. Place a leaf on the wet surface and finish with a covering coat. It sets hard in 30 minutes at room temperature. That's all there is to it.





WHAT YOU CAN DO WITH TILES. A good example is the way a dark kitchen was transformed into a bright and cheerful room at surprisingly modest cost. Castoglas was used in three ways . . . (1) for making the two decorative glass screens with embedments of real leaves and flowers, (2) for making the butterfly and leaf tiles above the countertop, (3) for "glassing" the kitchen countertop. Castoglas is waterproof and heat- and acid-resistant. It's easy to clean. You can also make handsome table tiles, trays, lamp bases and tabletops with embedments of leaves like the one shown in the photograph.

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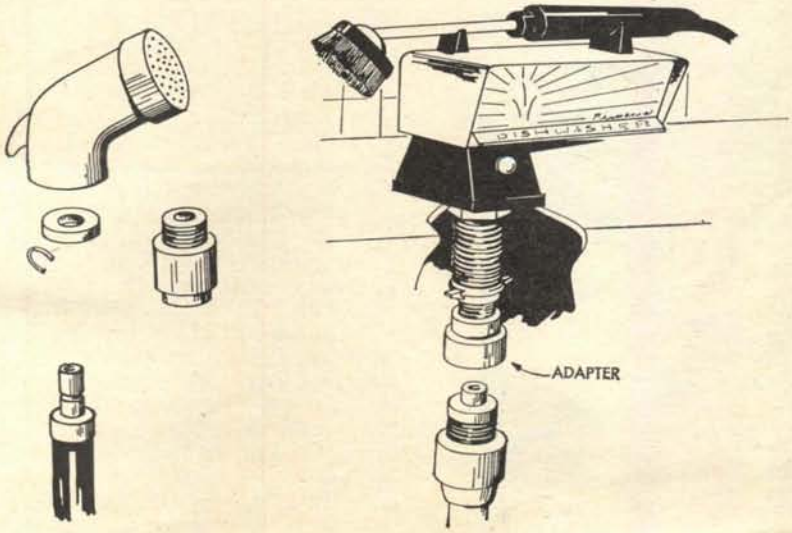

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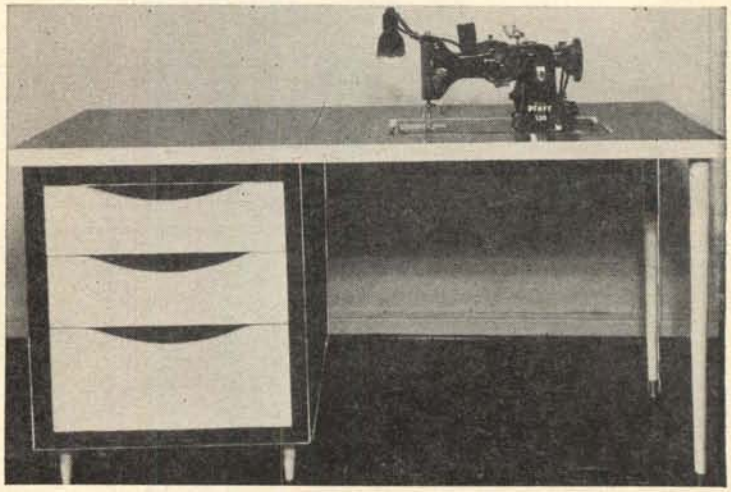
Sewing-Machine Table

OSCAR PARSONS

Completed table is an attractive piece of furniture. Machine is flush-mounted into large table surface.



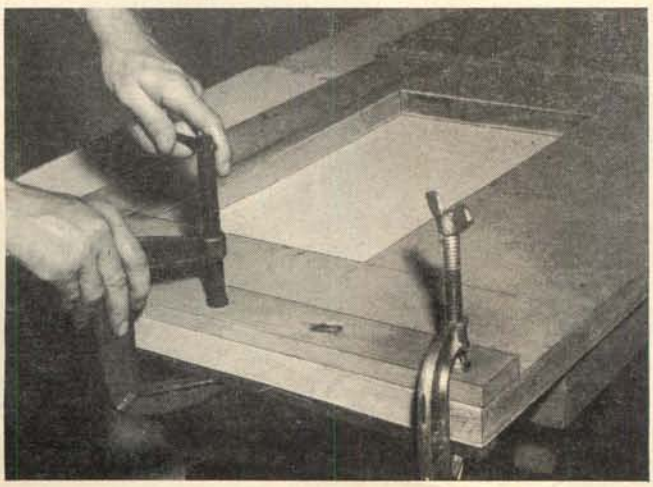
Front view of sewing-machine table shows its attractive, modern design, how base of sewing machine is fitted flush with table top.

YOUR WIFE WILL BE DELIGHTED with this handy table, if she has a portable sewing machine that usually is set up on the dining-room table when she has sewing to do. The machine is fitted in the table so the base is flush, in effect increasing the work area several hundred times. Large drawers in the cabinet at one end provide generous storage for spools of thread, bias tape, buttons and other sewing needs as well as accessories for the machine.

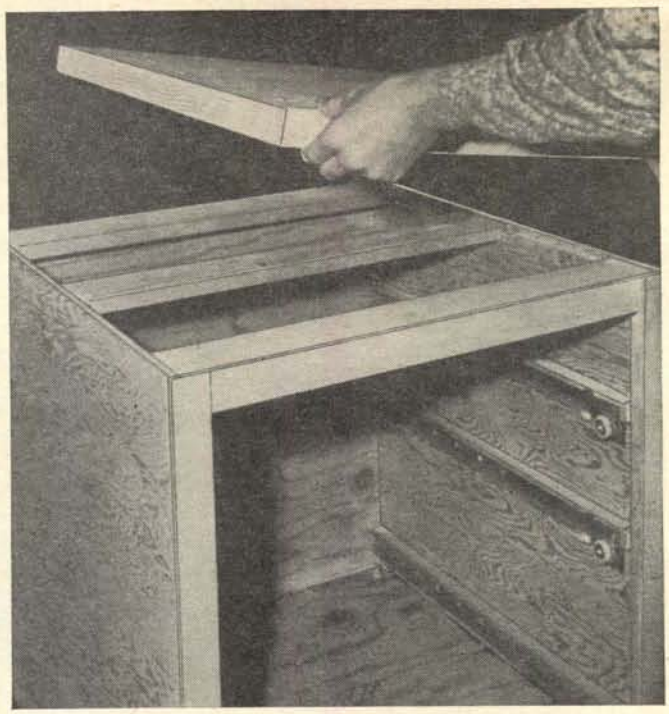
The top of the table is a 24-in., hollow-core door. Trim it to 60 in.; this will leave the plywood faces unsupported. Spacer blocks must be fitted between the faces, glued in place and held under clamp pressure overnight. The cutout for the machine is reinforced in the same manner. The dimensions given for the machine cutout are for a particular machine. Measure accurately the machine to be used in your table before making the opening. Also the bottom cutout must be 1 in. wider in both directions than the top. This allows for strips of ½-in. plywood to be glued and screwed to the reinforcing blocks to form the sides of the box into which the machine is fitted. Determine the depth of the box by measuring the height of the base of the machine, thus positioning the top of the base flush with table top. The bottom of the box also is ½-in. plywood, and is screwed and glued to the sides. No dimensions are given for the box, as they will vary with each make and model of machine.

The sides, back and bottom of the drawer cabinet are ¾-in. plywood. Three strips of the plywood 3 in. wide, or 1 x 3 solid stock are used

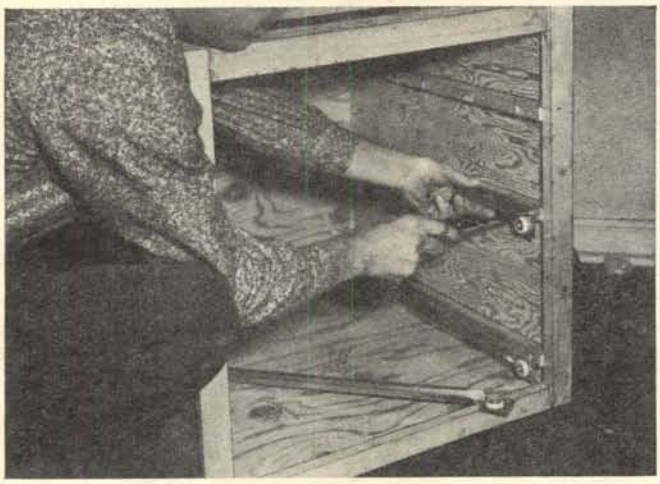
Where door is cut, leaving unsupported plywood skin, it must be reinforced with blocks the same thickness as the original core material. Blocks are glued in place, allowed to set overnight under clamp pressure.



Top is fitted over cabinet frame, attached with glue and with 2-in. No. 8 flathead screws driven into the door through the top members of the cabinet frame. End of top is positioned so that it projects 2 in.

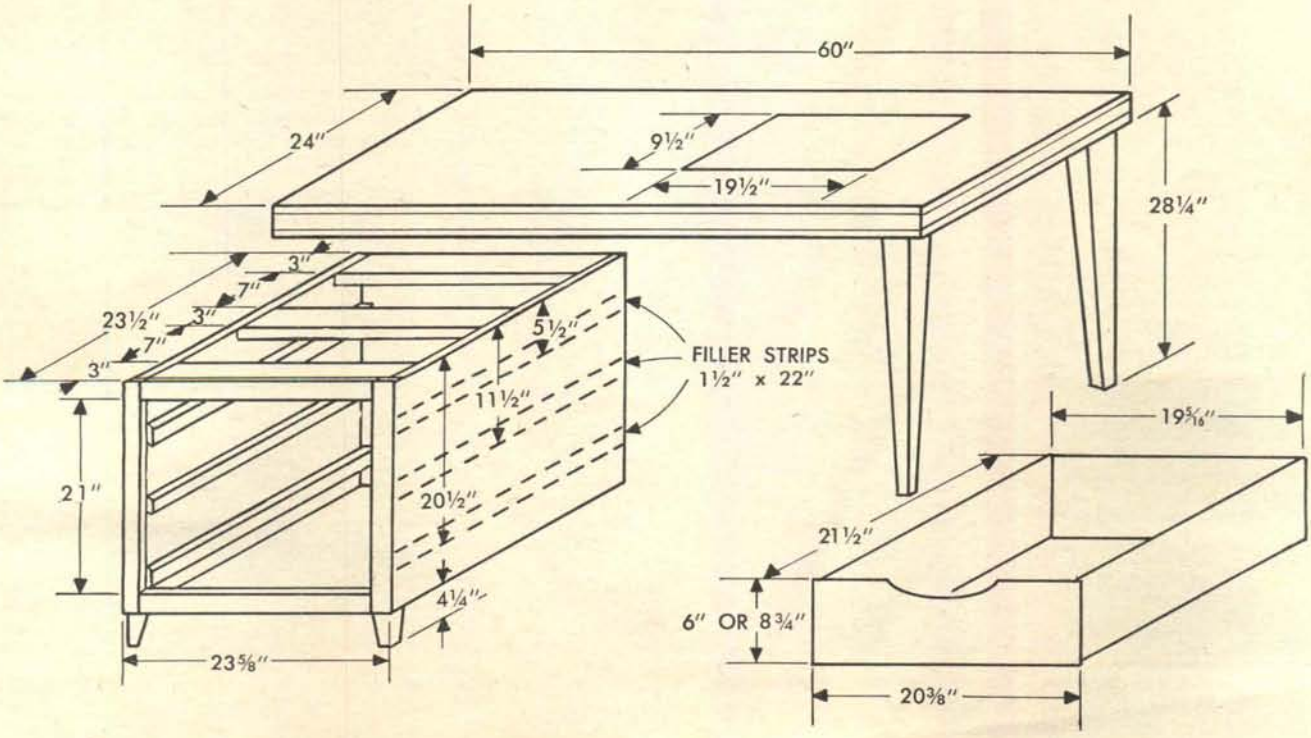


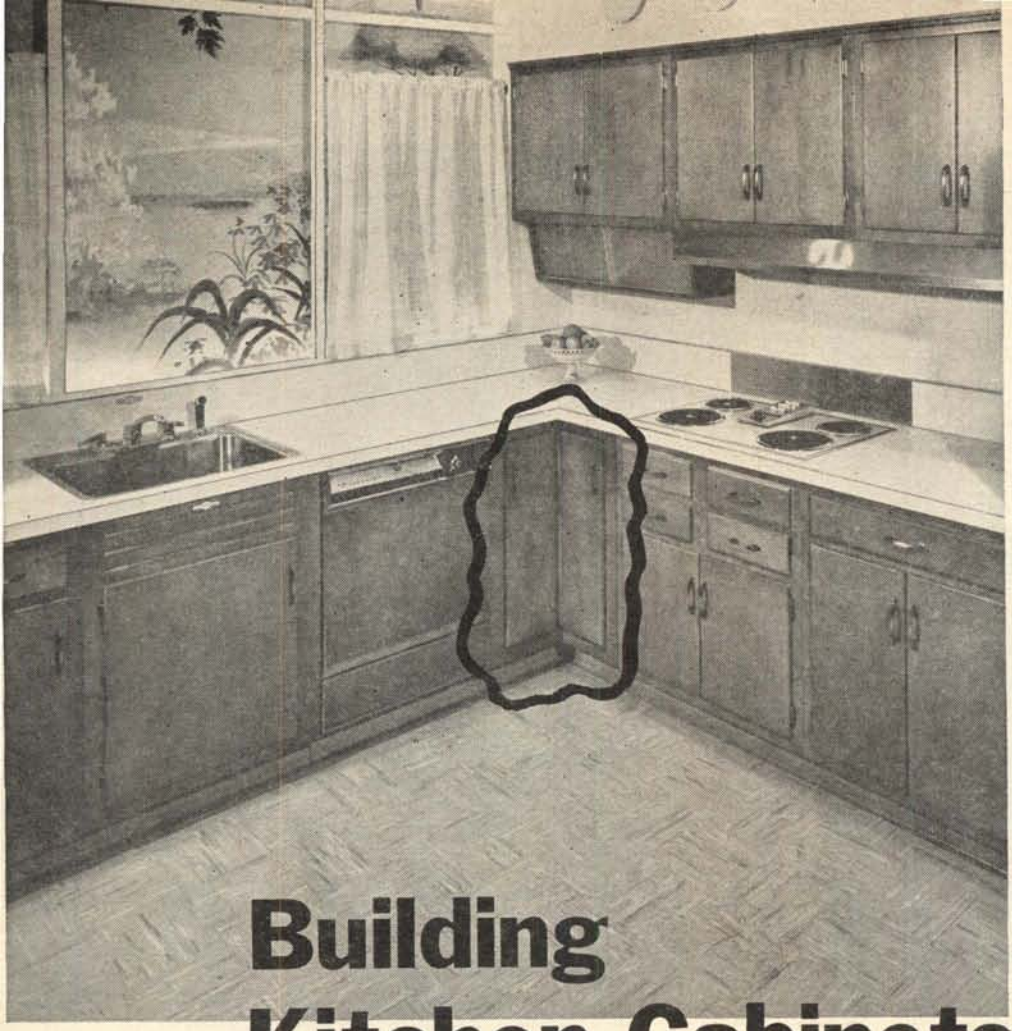
Filler strips are mounted inside cabinet so that drawer slides when mounted are clear of trim strips on face of cabinet. Metal slides assure that drawers will roll easily.



for the top. Filler strips are screwed to the inside surfaces of the sides to permit the installation of metal drawer slides. The slides used in the original required the drawer to be 1-1/16 in. narrower than the opening; check the instructions packed with the slides you purchase to determine if that measurement should be less or more. Adjust the widths of the drawers accordingly. Square or round legs can be made, or purchased, for the sewing-machine table, short ones being required under the cabinet, longer ones under the open end of the table.

The table top can be sanded smooth, (finished doors require very little sanding), then shellacked and varnished or painted, or plastic laminate such as Formica, Micarta or Textolite can be applied to provide a really deluxe table. Laminate can be applied to the table edges, or metal or plastic trim. Paint the cabinet and drawers contrasting colors as shown, or to match the laminate on the top. △ △





1. Indicated is the corner cabinet, typical of the type described in this article. Diagonal-corner also is used.

Building Kitchen Cabinets

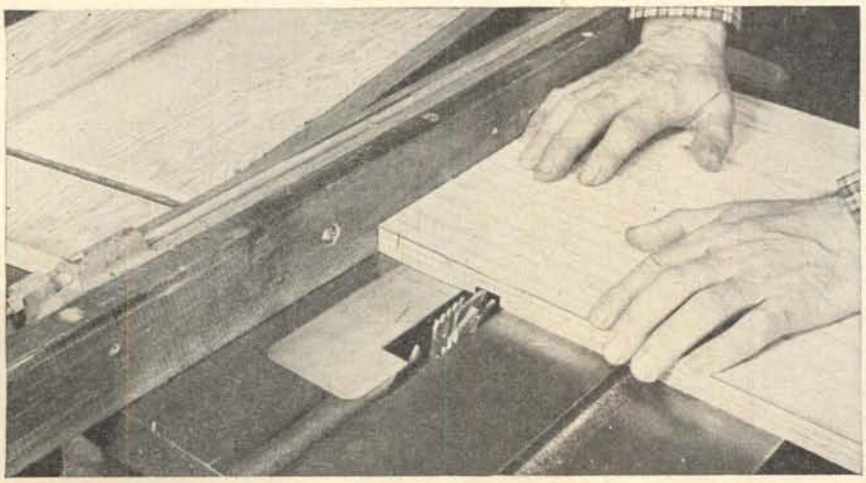
PART IV **RALPH TREVES**

CORNER CABINET

BEFORE STARTING this article we would like to mention that it has been brought to our attention that the 4 x 4-in. cutout for the toe space shown on the cabinet in Part I of this series is not "standard." You will note that our corner cabinet, Fig. 5, has a toe space 2½ in. deep and 3½ in. high. While considered more "standard" it will not suit every situation, nor personal preference. We suggest you check other counters with various measurements to find the one that suits you, (or the wife), and make the toe space to suit. If you are adding to existing cabinets you must, of course, match the existing space.

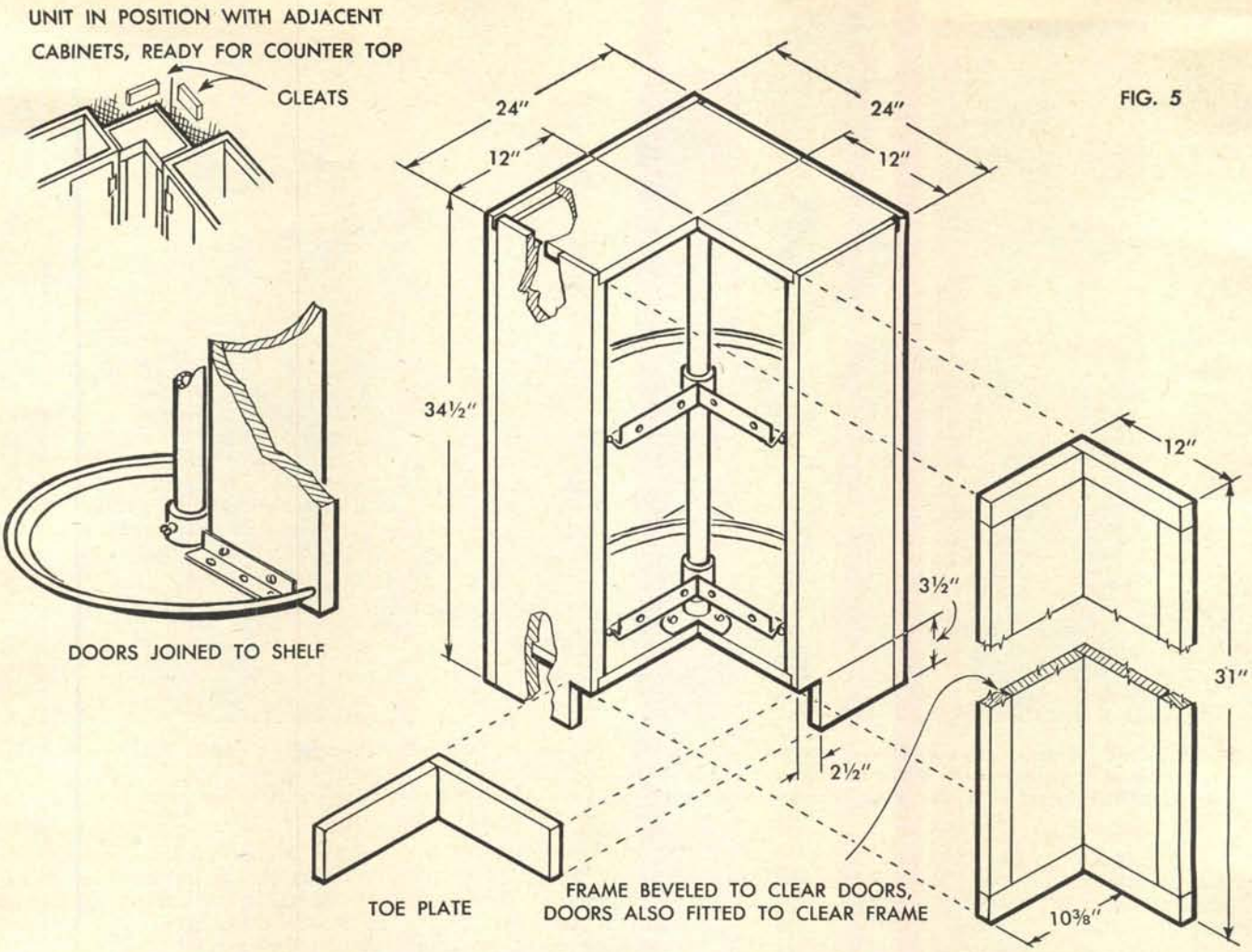
Particularly with an L-shape arrangement in a kitchen, the corner cabinet is a key section. The design of this cabinet has evolved over a number of years to solve a two-fold problem: making maximum use of an otherwise wasted space, tying together in the most attractive and

2. Clearly shown is our cabinet construction, framework that fits around door which rotates back inside cabinet.



3. Dado is cut 3½ in. from lower edge of each vertical member to receive the bottom shelf. The 3½-in. dimension can be altered, according to personal requirements, or in order to match other cabinets already built.

4. Rabbet is cut in upper edges of vertical members; it is ¾ in. high, ⅜ in. deep. Top piece then is flush with top edges.



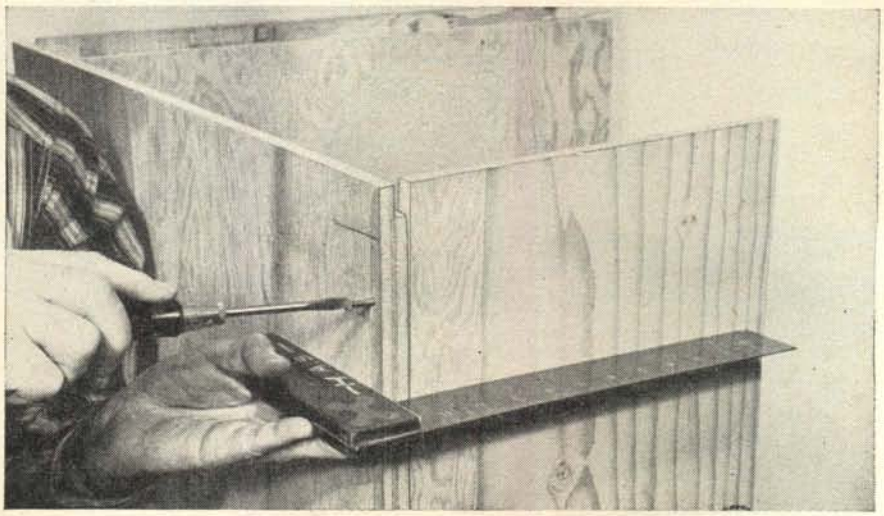
practical manner the two long groups of cabinets that meet at right angles in the corner.

The revolving-shelf system works out well, providing readily accessible storage for a considerable quantity of canned goods, cleaning supplies or other kitchen necessities. In addition, the corner cabinet permits construction of a single stretch of counter top for better appearance and larger area.

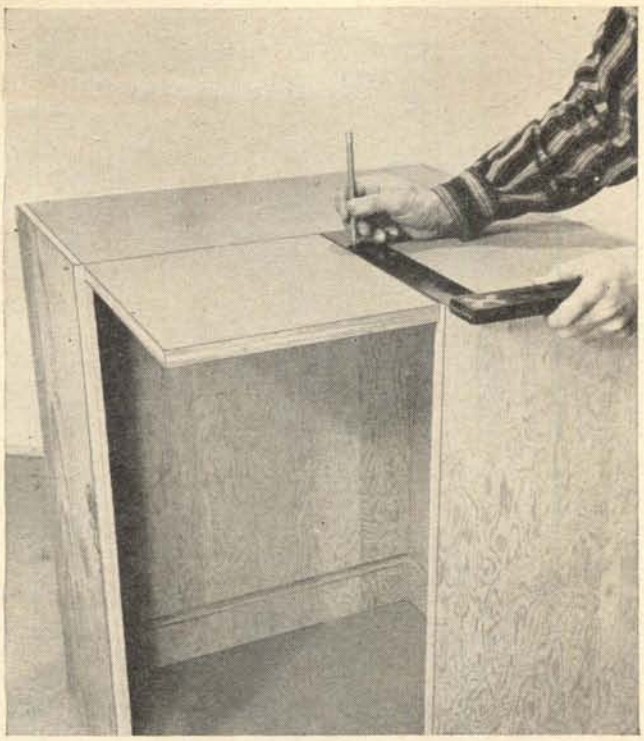
With this type of corner cabinet the counter top is built as a one-piece, L-shape unit. A later article in this series will describe how to make this counter top, and include an ingenious method of joining the two lengths of plywood so the surfaces are absolutely flush, the joint absolutely tight. Also explained will be the technique required for butting the plastic-laminate sheets together to provide a watertight joint when they are cemented to the plywood counter top.

There are two basic types of cor-

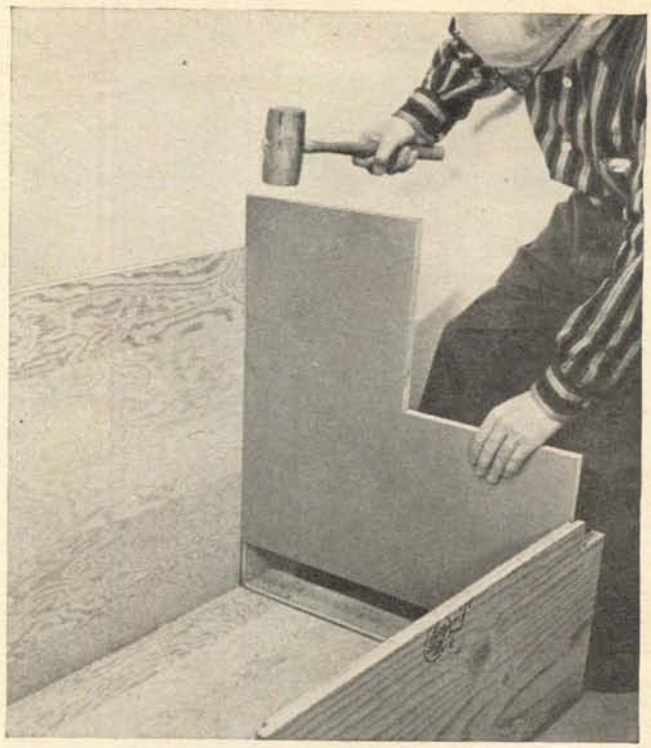
6. One cabinet back is shortened ¾ in. in width, then holes are drilled with Circle-Sink or Screw-Mate type drill bit.



7. Use a try-square to keep the cabinet side square while driving the screws. Temporarily fitting the square-cut top member also will help keep the cabinet sides true. Note here that we are building a cabinet that is just 12 in. deep.

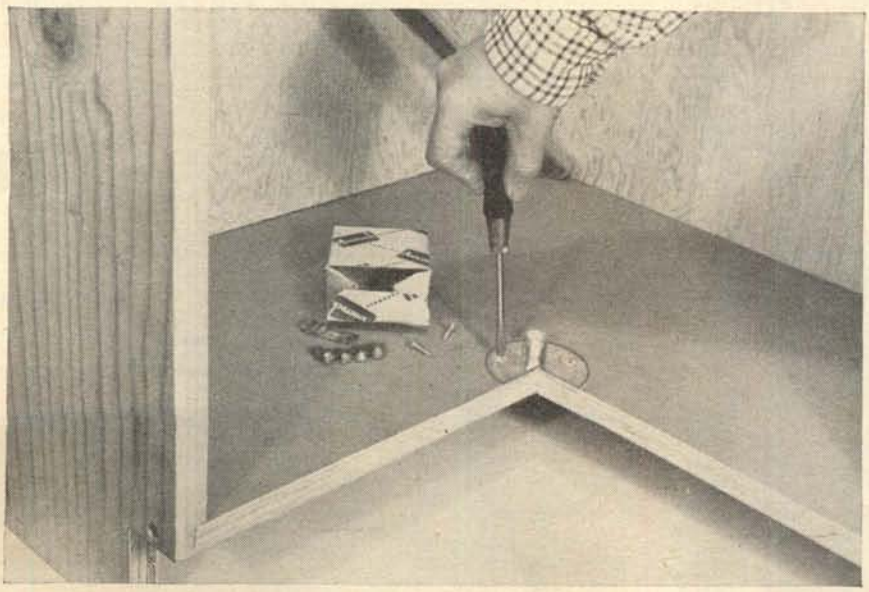


8. With the top temporarily in place mark the lines for the set-back cutout. Both top and bottom shelves are identical, so also mark the bottom shelf and make the same cutout in it.



9. Bottom shelf may fit snugly in its dado. Tap along the edge to force it evenly into the groove, make sure it is seated all the way to the bottom of the groove. Glue can be used in assembly.

ner cabinets. The one described in this article retains the true right angle where the cabinet sections join. In this type, Figs. 1, 2 and 5, there are two small doors, both mounted directly on the revolving circular shelves. To reach the shelves, either door is pushed. This rotates the shelves so the shelf area at the rear is brought forward. In the other type of cabinet the front is positioned diagonally between the two cabinet sections. One large door or two smaller doors provide access to the fixed shelves inside. These shelves are of necessity quite deep and it is somewhat of a problem to reach to the back.



10. Revolving-shelf hardware comes as a set, including the base plate that is notched 90 deg. Position this base plate exactly at the corner of the cabinet cutout, attach it with the screws provided. Metal circular shelves can be purchased, or wooden shelves can be cut to fit a particular corner cabinet.

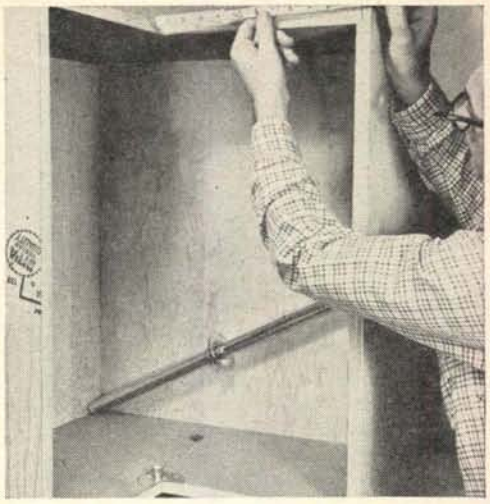
First decision to make when constructing the right-angle cabinet is the size. The cabinet can be built to the full 24-in. depth as the others that will be adjacent, or it can be made shallower to conserve on lumber and bulk, Fig. 5. If the cabinet is 24 in. deep, then the sides along the walls will be 36 in. The largest available circular shelves are 28 in. in diameter, which will not quite fill this space, and the doors each would have to be about 18 in. wide to permit full access. There is no real need for making the corner cabinet extra wide, as the space can be better utilized by the regular cabinets. As indicated in Fig. 5, keeping the cabinet fronts to 12 in. each will permit using 22 or 24-in. diameter shelves in a cabinet of practical size. The smaller cabinet is attached to the adjacent cabinets, Fig. 5, and cleats on the walls support the counter top.

Start the project by ripping a 4-ft.-wide plywood panel to 2-ft. widths. Cut off three pieces 34½ in. long, then rip one of these pieces to get two 1-ft. strips for the cabinet sides, Fig. 5. In all four pieces cut a dado ¾ in. wide, ⅜ in. deep 3½ in. from what will be the bottom, Fig. 3. In the opposite ends cut a rabbet, Fig. 4, of the same dimensions. Check the dadoes to be sure the ¾-in. plywood will fit before you start assembly. Cut the toe space in each side member to

match the other cabinets. One of the back pieces is ripped ¾-in. narrower than the other, to allow for the thickness of the adjacent member. Assemble the four uprights, drilling screw holes and using countersunk, flathead screws, Figs. 6 and 7. Both top and bottom shelves are the same size, and each is ¾ in. longer in both dimensions than the inside of the cabinet, to allow for the depths of the dadoes and rabbets. Mark and saw the setback cutouts, Fig. 8 and install the bottom shelf, Fig. 9. Attach the base for the column of the circular shelves, Fig. 10, to the bottom shelf, then locate the top bracket and attach it to the top shelf. Fit the top shelf in place.

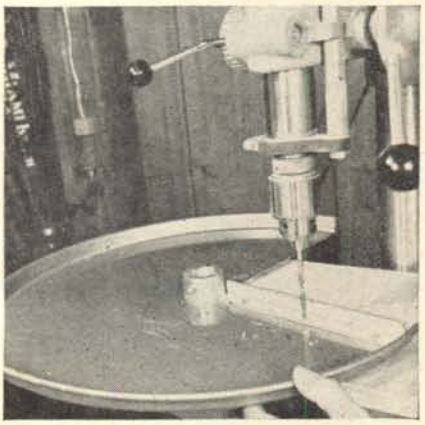
Attach the front trim of 1½-in. strips after carefully measuring, Fig. 11. Attach each piece before measuring for the next, Fig. 12. Metal shelves can be notched and angles attached, Figs. 13 and 14, or notched shelves can be purchased. The builder also can make his own wooden shelves and utilize available hardware. Both doors are the same height, one is narrower by the thickness of the other to maintain the correct dimension. They are attached directly to the shelf angles, Fig. 15. Edges of the doors must be tapered to permit slipping past the front trim. Positioning stops are available to automatically stop the doors in the closed position. The toe space is finished to match the rest of the cabinets, but need not be done until all cabinets are installed so a single strip can be used across all.

For information on the revolving shelf hardware: Amerock Corp., 4000 Auburn St., Rockford, Ill., or Lake Drive Products Co., Edgerton, Wis. △ △

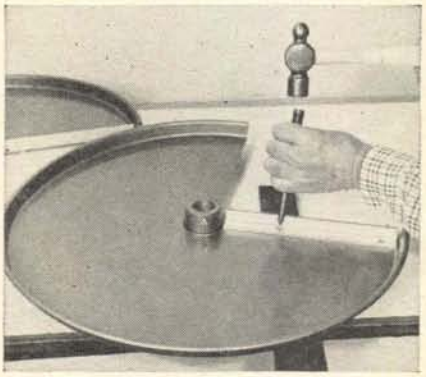


11. Edges of cutout are measured carefully, facing strips cut to size so they fit accurately, neatly.

12. Attach each facing strip before measuring and cutting for the next, attach with countersunk finishing nails.

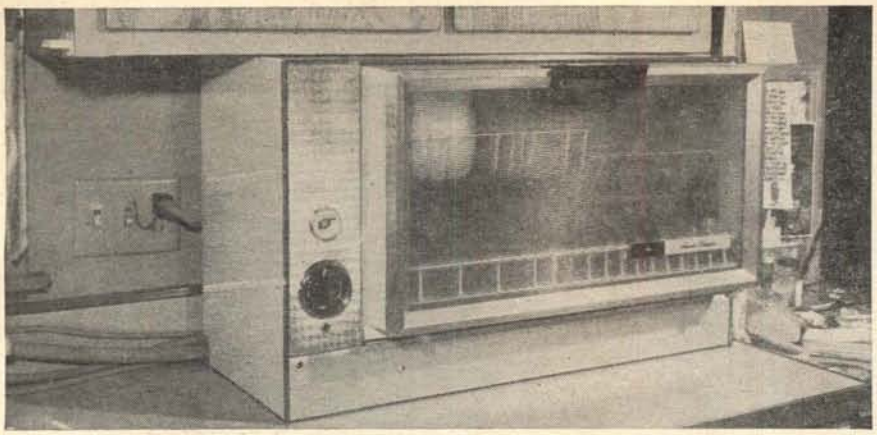


13. Angles can be attached to pie-cut made in circular metal shelves, pre-cut shelves can be obtained, or cut from wood.

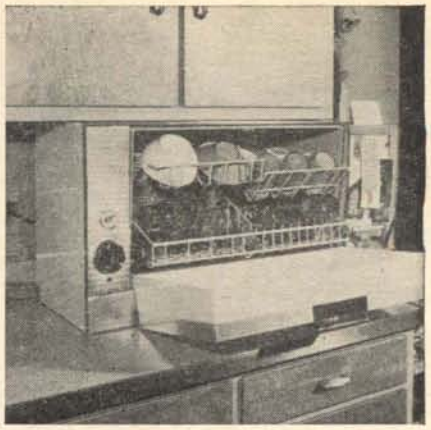


14. Rivets, as well as screws, can be used to attach angles to metal or wood. Hollow rivets make neat attachment.

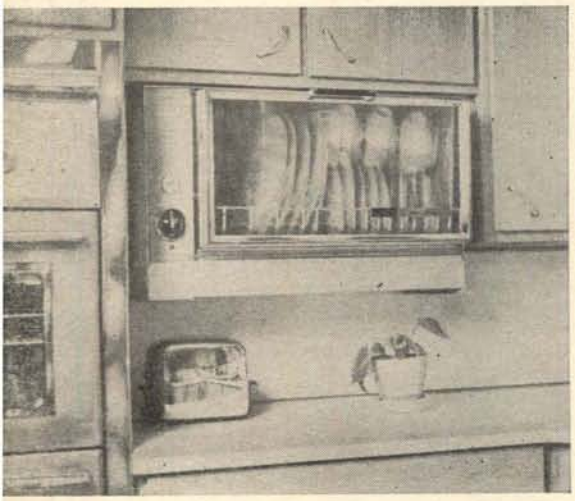
15. Doors are plywood or solid stock, are attached directly to the angles of the pie-cuts in the shelves.



Ingenious design of dishwasher permits it to be "installed" simply by placing on kitchen counter, slid back under wall cabinets. Adapter is provided for wall receptacle to assure that grounded circuit is used, eliminating any shock hazard.



This is middle-size unit, with capacity of 10 place settings. Open door here shows that unit is loaded only to part capacity.



Where wall-hung cabinets are higher, dishwasher can be hung under them with brackets available.

WHEN REMODELING your kitchen, we recommend you consider installing an automatic dishwasher as part of the project. Look over all the makes and models, as we did, and be sure to see the Ling-Temco unit. We thoroughly tested one of these units, which is unique in design, as compared to conventional units, and found it to have some very interesting advantages. First, it is horizontal, rather than vertical. This means it can be fitted into a wall, hung on a wall under wall cabinets (with special brackets available), simply placed on a counter for use as a "portable", installed in a cabinet, even fitted between two metal tubes and used as a room divider. In the latter case the electrical supply, hot water and drain lines are run inside the poles. When used as a portable unit, a kit is furnished consisting of a drain and hot water hoses, as well as a special aerator nozzle for the swing spout of the kitchen-sink faucet. The nozzle has a groove in it that accepts a number of spring-loaded ball bearings in the hose connector to assure a water-tight connection. For further information: LTV Industrial Div., Ling-Temco-Vought, Inc., Dallas 22, Texas. △ △

Unique Automatic Dishwasher

When used as portable, sitting on counter, hot-water supply is taken from sink faucet, drain hose dropped into sink.

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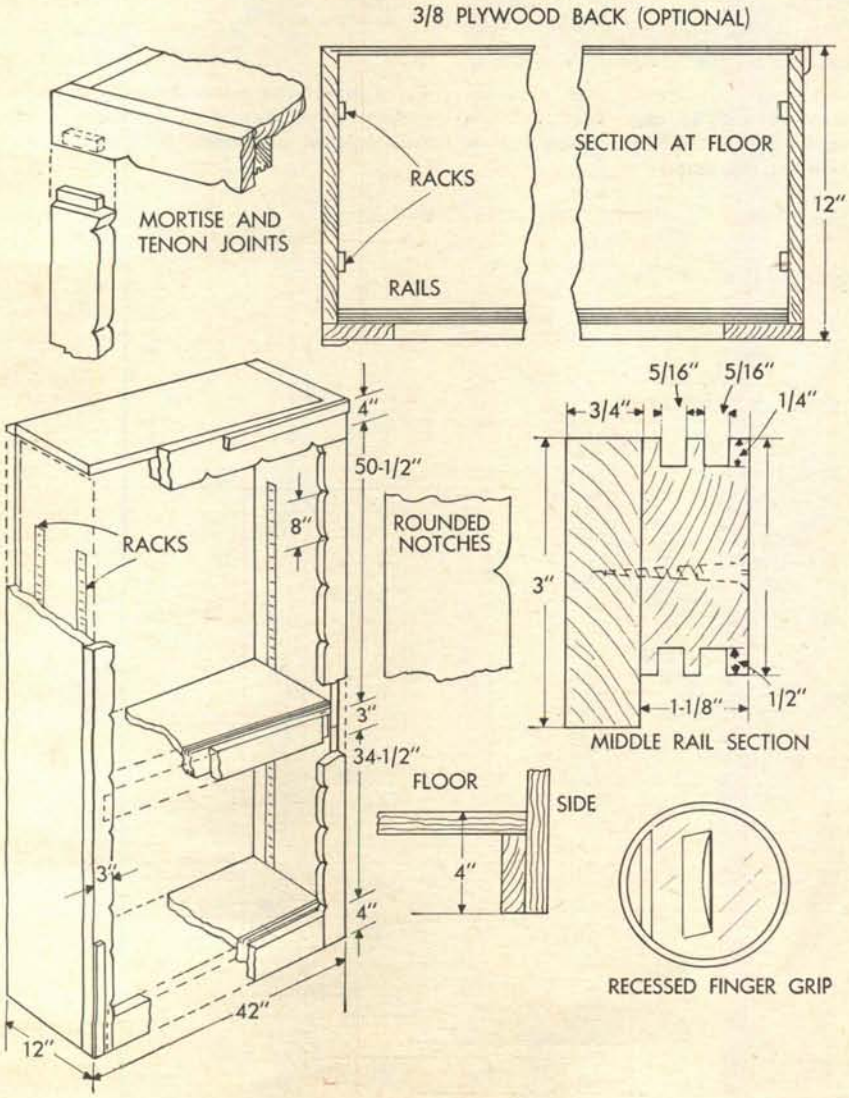
THIS ATTRACTIVE CABINET provides a practical means of displaying a doll collection — or ship, train or plane models—and can be made part of a built-in storage wall. Cabinet sides on the original are 1-in. solid maple; could be ¾-in. hardwood-faced plywood. The back of the cabinet can be the existing wall or ⅜-in. plywood may be used. Note that the floor, center shelf and top are wood and measure 1⅛ in. less than the depth of the cabinet to allow for the grooved rails. Grooves in the top rail, and the lower side of the center rail are twice as deep as the other grooves. This allows the doors of ¼-in. plate glass to be lifted in and out. The doors are made 3 in. wider than half the width of the cabinet to provide a 3-in. overlap. V-notches ¾ in. deep are cut every 8 in. in the frame members that are 3 in. wide. A rasp or drum sander is used to round the notches as indicated. Mortise-and-tenon joints are indicated for the frame, but can be doweled joints. When you have the glass doors cut, have finger grooves ground near the edge of each door at about half the height. Doors are ½ in. higher than the openings. △ △



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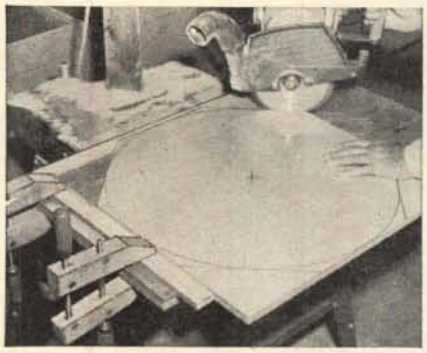
THIS UNUSUAL TABLE will hold a good supply of books and magazines, and it rotates to permit you to select any volume from any compartment without getting up from your chair. A reading light is part of the table, so you have everything you need for an evening of reading.

The table described in this article, Fig. 1, has a lamp that is the upper end of the "spine" of the table, Fig. 6. Two models were made, one without the lamp; it can be seen in the article describing the process of veneering. That table was assembled with a "lazy-susan" bearing which provides the rotating feature.

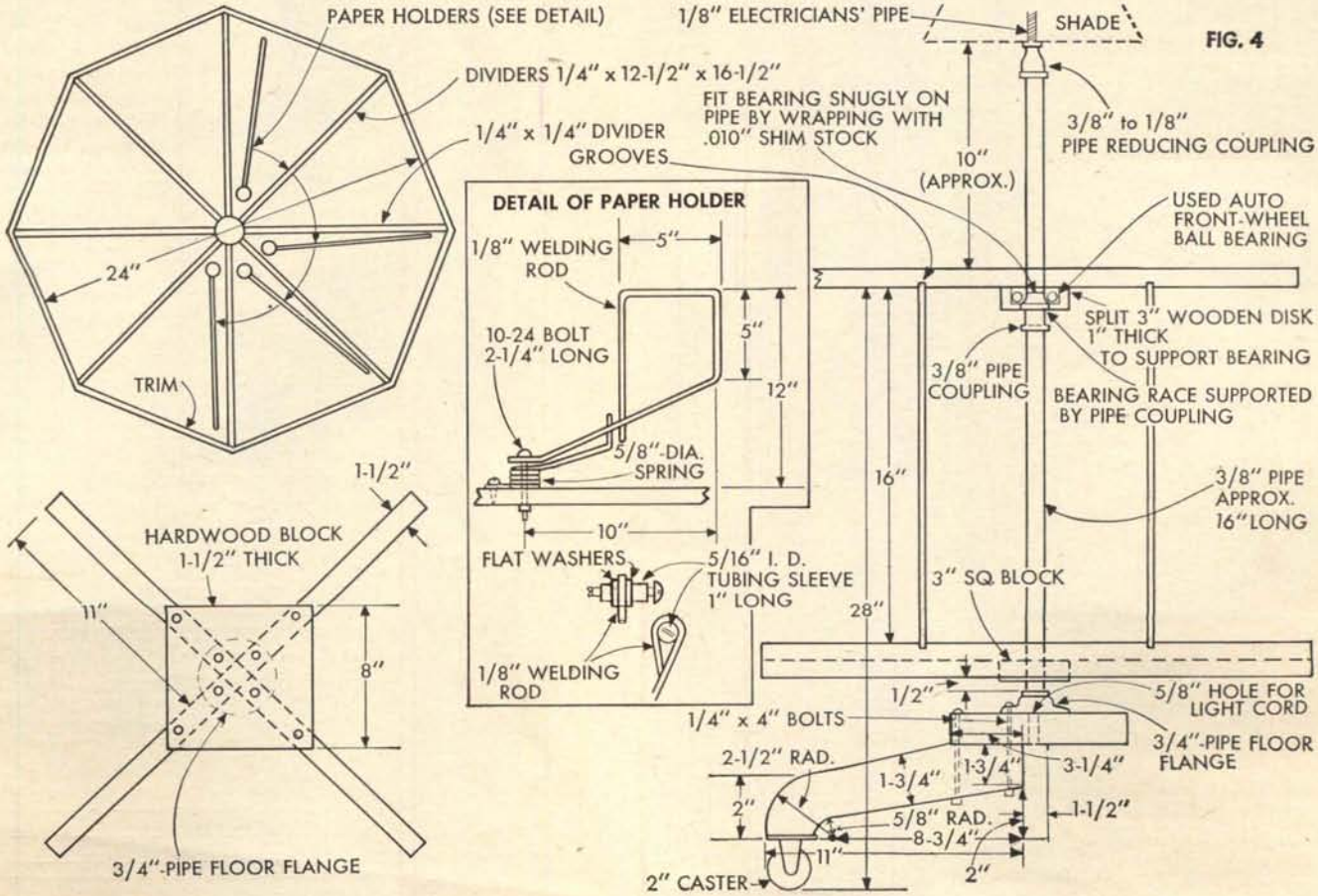
First step in making the table is to lay out the top and bottom, Fig. 4, on a 2-ft. square of ¾-in. hardwood-faced plywood. It also could be glued-up solid stock. If the octagon is marked out ac-

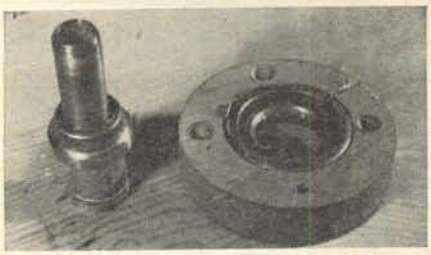
1. Note in this completed table that lamp column is enclosed in tapered wooden box of matching wood.



2. After careful layout, sides of table top are cut at 45-deg. angles. Block clamped to edge of table keeps top in position for the cuts.

3. Portable router can be used to make grooves that stop near center. Wood strip is used as guide.

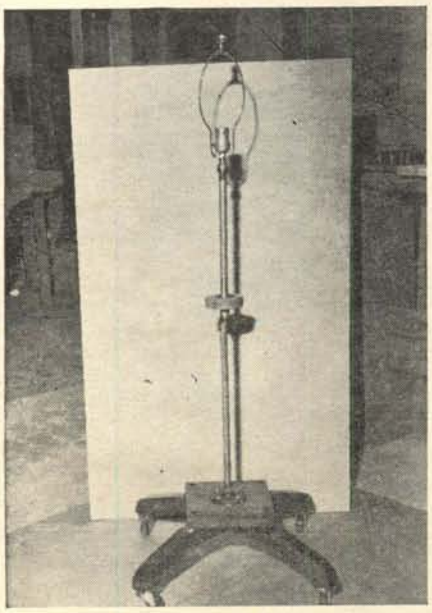




5. Race from auto front wheel is held in split wooden ring; inner ring from bearing is supported by pipe coupling.

curately, the sides of the plywood square can be held against a block clamped on the table of your saw, Fig. 2, and with the arm of a radial-arm saw set at 45 deg., the top is cut out quickly. A table saw will require a modification of this set-up. The points of the octagon are joined with lines, then a portable router, Fig. 3, or table saw is used to make the ¼ x ¼-in. grooves in the underside of the top and the upper side of the bottom. The partitions now are cut to size, Fig. 4. The legs are cut from hardwood and the "spine" is assembled. The length of pipe from the coupling up is not attached until after the table assembly, consisting of the top, bottom and partitions has been glued together. A lazy-susan bearing can be used between the leg assembly and the bottom of the table instead of the wheel bearing, if desired.

The table assembly is fitted over the spine and the split ring, Fig. 5, that holds the outer race of the bearing is glued and screwed to the underside of the top. If a lazy-susan bearing is used it is fastened to the leg-assembly block, and to the bottom of the table. △ △



6. "Spine" of table is pipe column through which wire for light is run. It stands still, table rotates around it.

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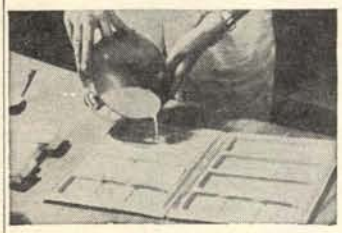

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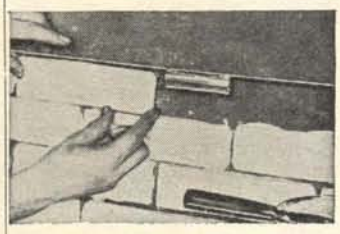

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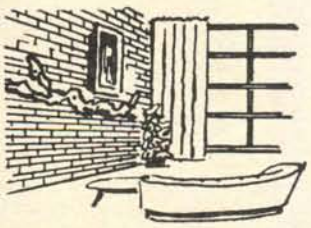

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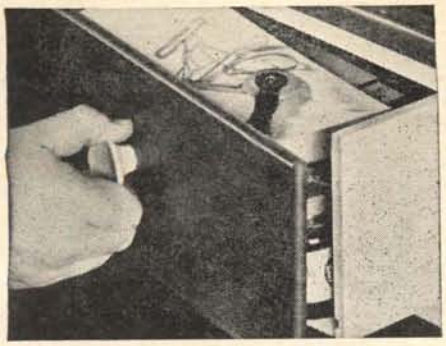

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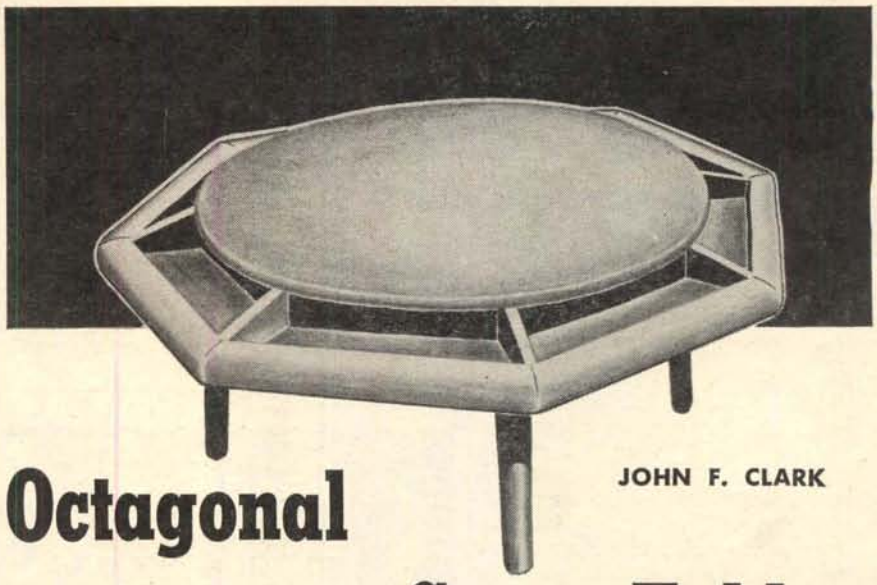


Octagonal Game Table

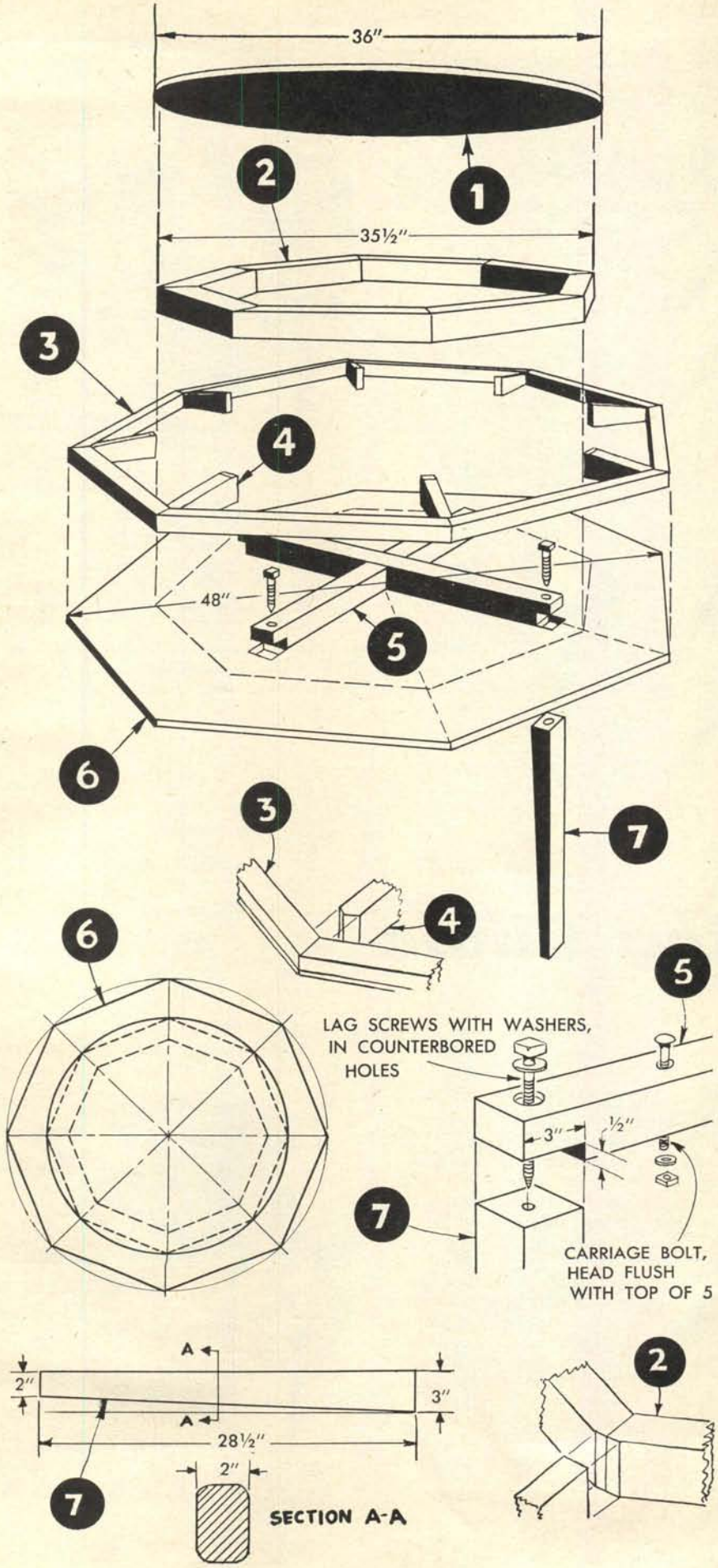
JOHN F. CLARK

LOOKING SOMEWHAT like a flying saucer, this eight-sided table fills the need for an all-around game table for den or recreation room. For the upper and lower tops, ⅜-in. plywood is used, both being cut from one 4 x 8-ft. sheet.

The upper top, No. 1, is 36 in. in diameter. The lower top, No. 6, is 48 in. in diameter. After drawing the 48 in. circle, scribe another circle 36 in. in diameter inside the 48-in. line, and another circle 35½ in. in diameter. Mark a diameter across the circle, then another diameter at right angles. Bisect two of the resulting 90-deg. angles and draw diameters along these bisections to produce two more diameters; the circle now is divided into eight pie-slice sections. Draw lines from each of the points where the diameters intersect the circumference to the adjacent points to produce an octagon. Saw out the octagon, and do not remove any of your penciled lines. Use a short length of 2 x 2 and mark the locations of the No. 2 pieces on the 35½-in. circle. Determine the lengths and angles of the No. 2 pieces from the layout and cut the required eight pieces. Position them on the lower top, then place a short length of 1 x 2 along one of the diameters and against the angle of one pair of No. 2 pieces. This will show how wide a flat must be sawed on the ends of the No. 2 pieces to permit the No. 4 pieces to butt against them, as indicated in the drawing. The opposite ends of the No. 4 pieces are beveled to fit the angles of the outer edge of the lower table top. Also, each of the No. 4 pieces is cut on a taper, so the outer end is the same height as the 1 x 1 pieces, No. 3, that fit around the outside edges of the lower top. The No. 3 pieces are cut and fitted in the same manner as the No. 2 pieces. Cut the No. 5 pieces that are 30-in. lengths of 2 x 2 and half-lap them at the centers. Notch the ends as indicated. Locate these pieces on the table top and mark and cut the rectangular holes into which the upper ends of the 2 x 3 legs fit. The legs can be left rectangular, or turned round. However, in the latter case, leave the upper 1 in. rectangular to assure a tight fit in the holes in the table top. Attach all parts to the lower table top with glue and nails, except the upper top, No. 1. The upper top is attached with small mending angles and screws to the No. 2 pieces. The upper top, and the compartments can be covered with felt or plastic sheet, and the No. 3 pieces can be rounded to appear as in the illustration. △ △

MATERIALS LIST

1—Top, ⅜" plywood, 36 in. dia., 1 req'd.
2—Upper frame, 2 x 2 white pine, cut to fit, 8 pcs. req'd.
3—Lower frame, 1 x 1 white pine, cut to fit, 8 pcs. req'd.
4—Partitions, 1 x 2 white pine, cut to fit, 8 pcs. req'd.
5—Cross braces, 2 x 2 fir, cut to fit, 2 pcs. req'd.
6—Sub top, ⅜" plywood, 48 in. dia., cut to octagon, 1 req'd.
7—Leg, 2" x 3" fir, 4 req'd.



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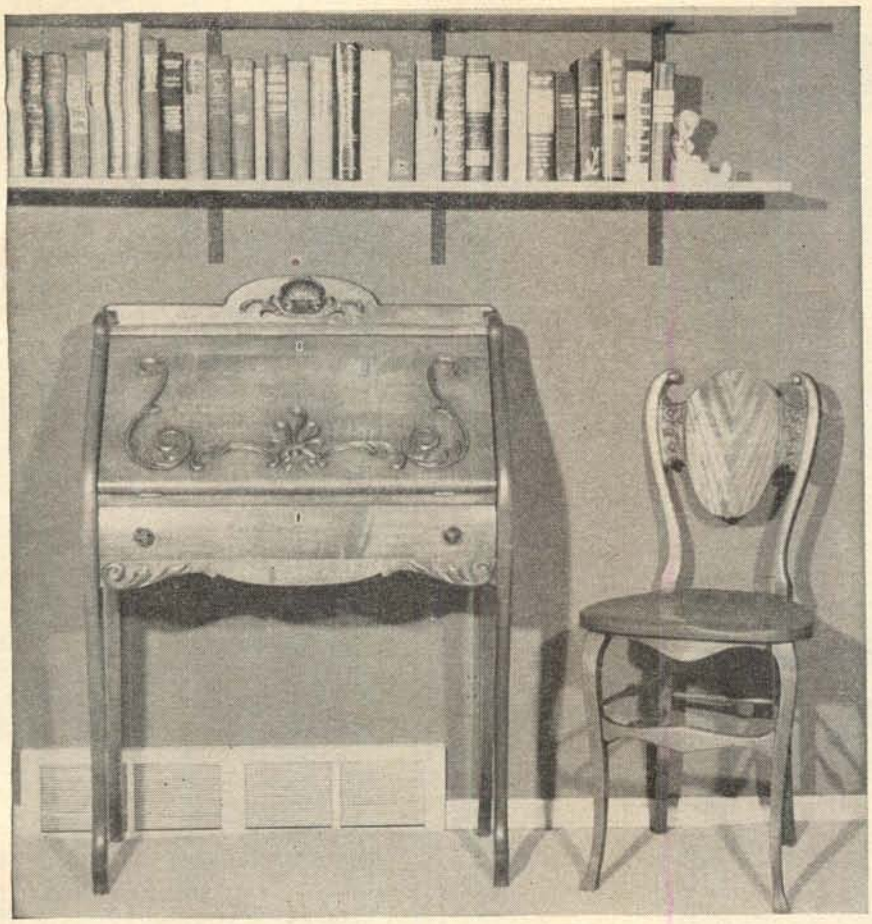


1. Both desk and chair were dark and ugly before professional stripping, amateur staining and refinishing.

Refinishing Clinic

G. L. BIX

Because our Research Department has received so many inquiries regarding the removing of old finishes and applying new ones on furniture, woodwork and other items, we have commissioned Mr. Bix to do a continuing series of articles on this subject. This first article introduces Mr. Bix, describes the stripping business he founded, which now includes over 40 franchised dealers from coast to coast and gives the background of his experience. He is consultant for a number of paint firms, appears frequently on television informational shows where he passes on tips and information on refinishing, and he also spends considerable time traveling around the country lecturing to various groups on the subject.

As he says in his article, he is not a professional refinisher; he is an experienced amateur. We know of no better man to help our readers.

FURNITURE REFINISHING interests probably more people than any other subject in the do-it-yourself field. The purpose of this series of articles is to pass onto you the experiences, including successes and failures, of thousands of amateurs like yourself who have done refinishing on various wooden items.

While you might expect anyone who attempts to help you with your refinishing problems to be a professional in the field, I must confess I am not. Refinishing many items of furniture for personal pleasure has made me an experienced amateur, but never having done it for pay, I am not a professional. All equipment and materials used are those available to anyone.

2. Here finish has been removed with paint remover. Finish is off, but dark stain still remains in the wood.

3. First step in professional stripping job is to flood desk with remover, scrub with special brushes to remove finish.

4. Stain-removing process begins by applications with steel-wool pads of special-4-part chemical solution.

5. Power buffer is used to clean edges, corners and carving. Special brush in tool will not scratch wood.

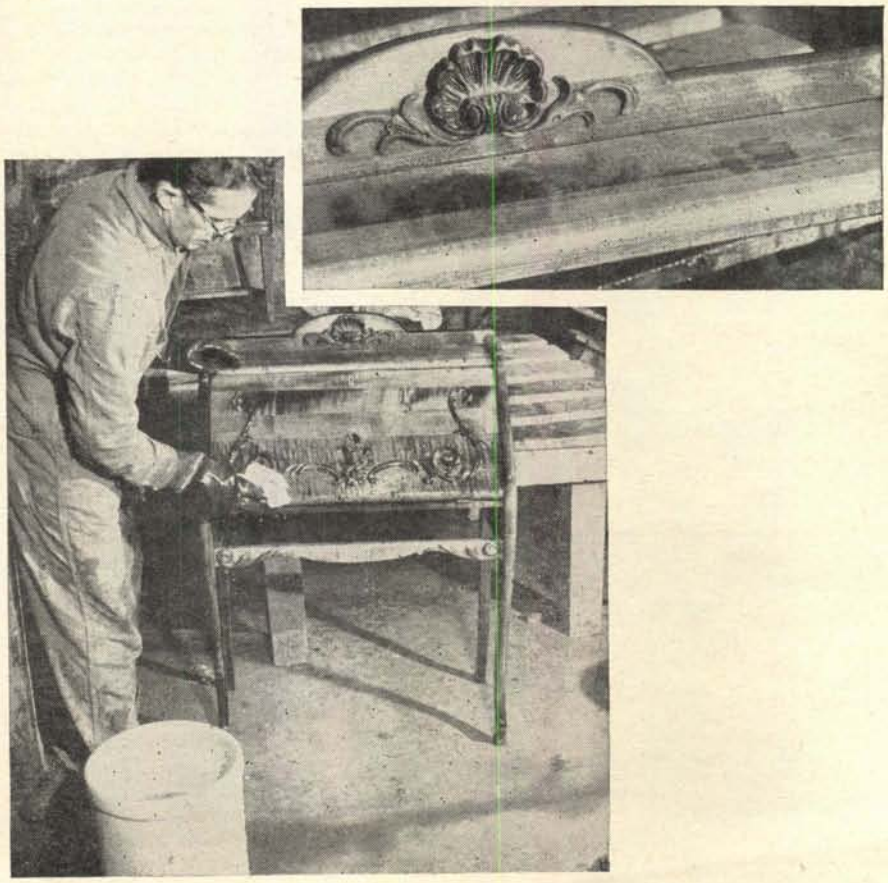
Refinishing a piece of furniture requires three steps: 1. Removing the old finish and sanding the surface smooth. 2. Staining. 3. Applying the finish. We have proved countless times that if the finish is removed properly, the other two steps present very little difficulty.

Problems encountered with paint removers are not due to the quality of the material (we personally have tried every brand of paint remover we could find, almost a hundred, and have **never found a bad one),** but rather to the inadequate instructions printed on the containers. Later articles in this series will tell you how to use paint removers more effectively.

Even if you do the finest job of removing a finish, the stain will remain. In Fig. 1 is shown a desk with a dark finish. After the finish has been removed with paint remover, Fig. 2, the wood still is dark. Bleaches generally are used to lighten such a dark finish. However, bleach does not remove the stain; if it did you would see it run out of the wood when the bleach was applied. Instead, the bleach drives the stain deeper, and merely lightens the surface of the wood.

How can the stain be removed? At the present time, to the best of our knowledge, only the Bix system of stripping can do this job. Fig. 3 shows the first step in the stripping process. A quality paint remover is flooded over the item in a tank and special fiber brushes are used to scrub away the old finish. The piece then is moved to a scrubbing table, Fig. 4, for the stain-removing process. The wood is scrubbed with steel wool and a heated, four-chemical solution. One of the chemicals removes any finish not removed in the first step, the second chemical opens the pores of the wood so the stain can be removed and the third draws out the stain. (Note the dark stain draining onto the floor.) The fourth chemical insures against the other chemicals damaging the wood or loosening any glued joints.

As shown in Fig. 5, the carvings, edges and corners then are cleaned with a mechanical buffer with spe-

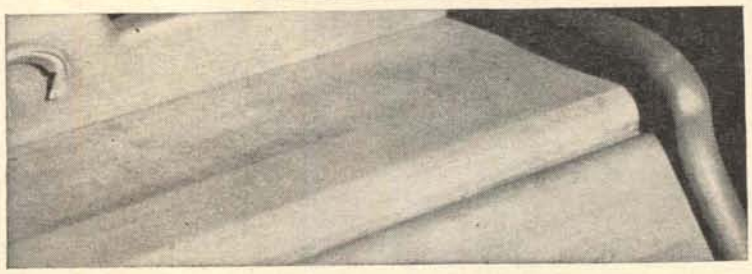


6. Last step in professional stripping is to remove all chemical residue. Perfume spot shown in inset is complication.

7. Desk is now dry after stripping, special attention to spot. Inset shows how spot has been removed completely.

cial brushes that will not scratch the wood. Another combination of chemicals next is applied, Fig. 6, to complete the stain-removing process, at the same time removing water or brush marks and other blemishes in the wood. After being allowed to work for several minutes, the chemicals are rinsed away and the stain-removing job is complete. Complete, that is, if there are no complications. In this particular case the complication is a spot on the top of the desk, insert in Fig. 6, caused by perfume or some similar material. Special attention is required to eliminate the spot. The insert in Fig. 7 shows the spot removed completely, Fig. 8 shows the desk when dry after stripping.

The owner's reaction when she saw the stripped desk was: "Why, it's beautiful. But what can I do with it now; I don't want to mess it up with an amateur refinishing job." I assured her that with just a few easy steps she could do a good job. After seeing the decor of the room in which the desk was to be located, I recommended Du-Pont's Fruitwood Stain. I suggested the first step be to sand the wood lightly with 5/0 garnet paper then to remove all sanding dust with her vacuum cleaner. Because she wanted a natural-looking finish, I instructed her to apply a liberal coat of stain, Fig. 8, then wipe it off within five minutes. The stained desk then was allowed to dry overnight. Deft Bartop Wood Finish was applied over the stain. Three coats were used, each being allowed to dry for three hours, then rubbed down lightly with No. 000 steel wool. The finished desk is shown in Fig. 1. The chair beside the desk also was refinished by the same gracious lady who definitely had no previous refinishing experience.



8. Amateur refinisher applied oil stain as per instructions, wiped it off after it had set for 5 minutes.

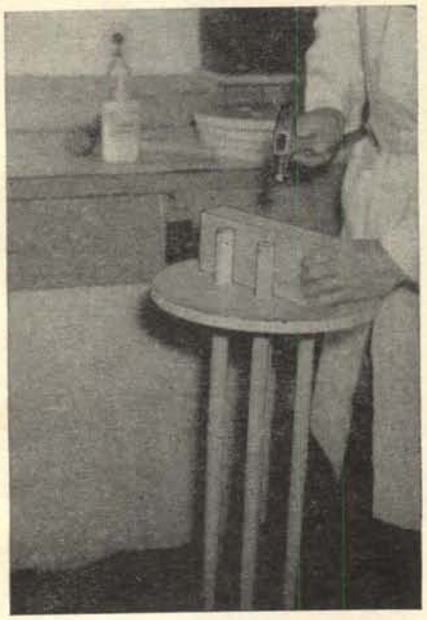
Even though I consider proper removal of the old finish and preparation of the wood to be of prime importance, I do not consider these to be the biggest stumbling blocks in the way of any of you doing a good refinishing job. The lack of detailed information on what to use and how to use it is the biggest problem. Most paint and hardware stores handle the right materials; unfortunately, not all clerks are well-versed in their uses. We invite all readers with specific refinishing problems to write to the Refinishing Clinic. We can solve your problems with materials and equipment readily available to everyone. Incidentally, do not request information on the uses of lye and other caustics. These materials simply damage the wood, and should not be considered. Furniture can be cleaned and refinished with materials that are safe for both you and any kind of cabinet wood.

Our first articles in this series will be devoted to describing how you can do a good job of refinishing furniture, even if you have had failures in the past. Some of you may be doing a good job of refinishing now, and may take exception to some of my advice. We are not overlooking you more experienced people, we just feel that the beginners need more help. Also, if any of you have refinishing tips that you have learned through experience, send them in. We will welcome your help and advice.

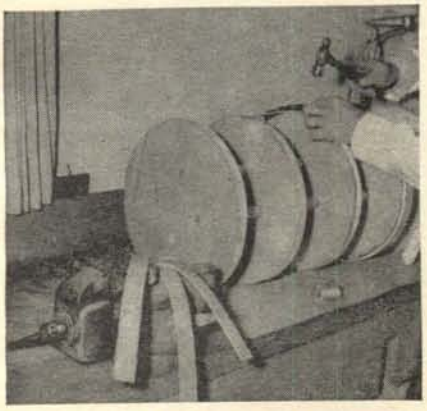
Send in your questions, send in your tips, whether on refinishing furniture, woodwork, picture frames or doors. They all will receive our personal attention. △ △

Fitting easily on bench corner or shelf, rotating rack keeps parts handy.

Drill all shelves at same time, mark them so they can be kept aligned in assembly.



Tap shelves down on dowels individually, wipe glue on dowels at correct positions.



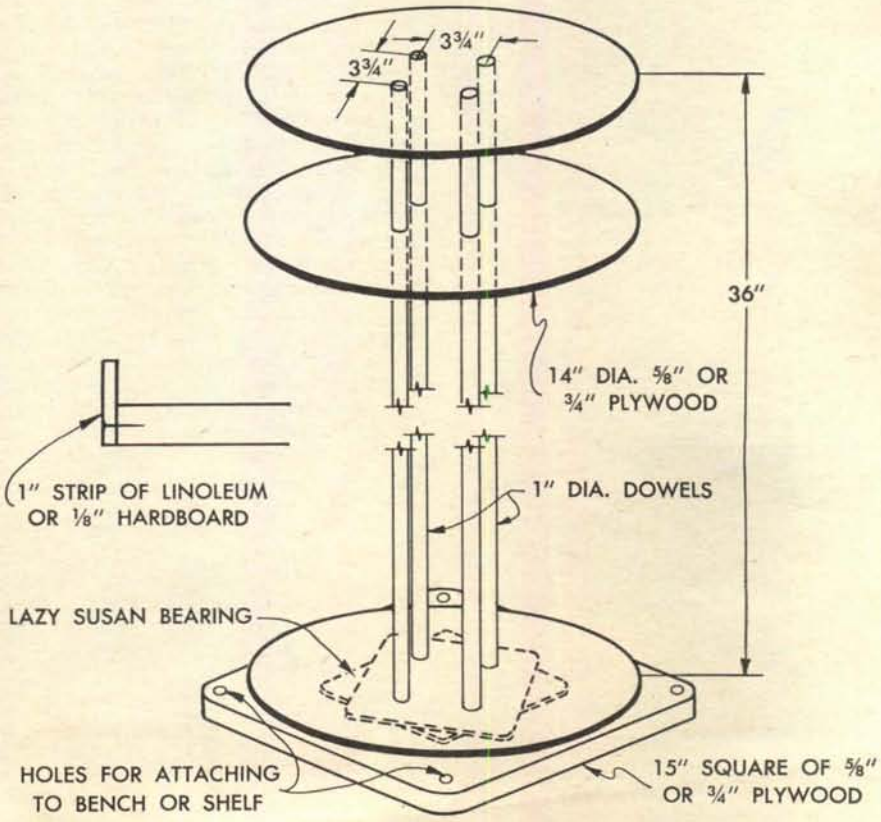
Final step is to tack strip of hardboard or linoleum to shelf edges to act as lip.

ROTATING PARTS RACK

CHARLES A. HAUGK

THERE IS ALWAYS need for more storage space in the workshop, and this handy rotating rack provides maximum area of storage in a minimum amount of shelf or bench space. The original was made to accommodate glass jars of various sizes, but shelf spacing can be changed to permit using food tins.

Construction requires just six disks of ⅝ or ¾-in. plywood and four standard-length, (36 in.), 1-in. dowels. A 15-in. square of plywood provides a base that can be bolted or screwed to a bench or shelf. A heavy-duty lazy-susan bearing, costing about $2, permits the shelves to rotate easily. Clamp the disks together, then mark the edges so they can be kept in the same relative position in assembly. Drill the four 1-in. holes through the shelves while they are clamped together. Wipe the lower ends of the dowels with glue, then tap them into one disk so the ends are flush with the bottom surface of the plywood. Tap the other shelves down on the dowels and apply glue to the dowels at the spot where the shelves are to be positioned. Square up each shelf with the dowels. As a final step, tack a strip of linoleum or hardboard to each shelf. △ △



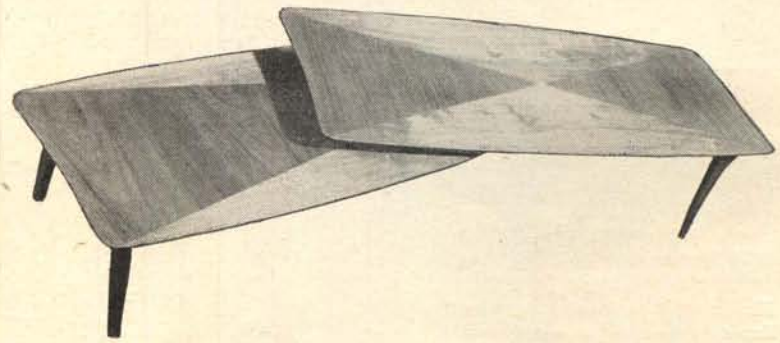
The Art of Veneering

ARTHUR WAKELING

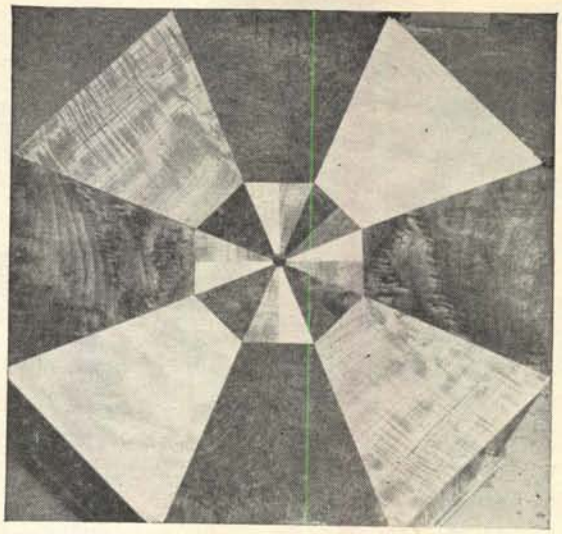
WE KNOW THAT VENEERING of wood has been done for at least 3,500 years because pieces of veneered furniture have been found in Egyptian tombs that old. The great English cabinetmakers Chippendale, Hepplewhite and Sheraton, and the American Duncan Phyfe, utilized veneering extensively. Why did they use veneering when solid lumber was readily available, and why should it be used today? Simply stated: You can do work which is quite impossible without their use. To obtain solid lumber of flawless grain and uniform color is extremely difficult, and very expensive. Veneers of exotic, relatively rare, woods can be obtained that are evenly grained and colored and modestly priced. Also, among the most magnificent wood patterns are burls and crotches, and these portions of a tree are weak structurally and would split, check and crack when used as solid lumber.

Another problem: If some tropical woods, such as ebony, were used to build furniture—if anyone could afford this lumber that is sold by the pound and is extremely difficult to machine—the item would have to be extremely small or it would be too heavy to move around. Ebony veneers can be obtained to apply to fairly lightweight lumber that is structurally strong, to permit building furniture with the appearance of solid ebony without the handicaps of weight and poor machinability.

Some of the magnificently-figured woods that can be obtained in the form of veneer are amboyna burl, crotch and mottle aspen, crotch and mottle avodire, Carpathian elm burl, crotch cedar, madrone burl, crotch and mottle mahogany, oak burl, figured purpleheart, mottle, crotch and bee's-wing satinwood just to name a few. When these veneers are applied to furniture surfaces they provide beauty that can be obtained in no other way. Note the photographs of the modern cocktail table with four triangular-shape triangles of walnut joined at the center by a burl. The matched

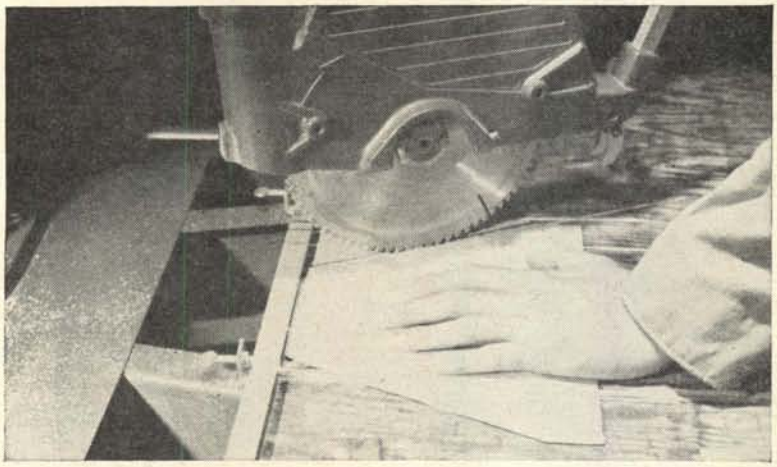


1. Completed top utilized all material from kit, was assembled with special contact adhesive that requires no clamps.



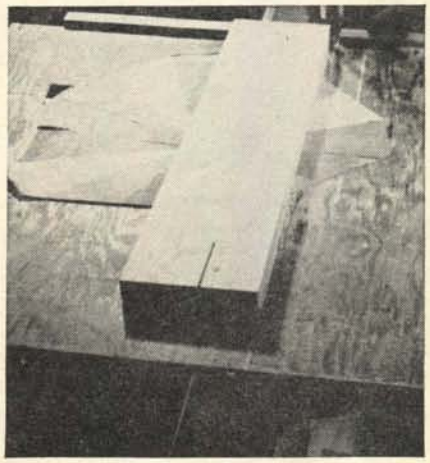
graining on the front of the chest of drawers could be obtained only by using matched veneer. The small chest becomes an exquisite work of art when it is inlaid with shapes and trim of veneer. The winter landscape and the picture of the dog are still further examples of the uses of wood veneer, illustrating that veneering can be a true art form.

For any woodworking project that requires panels, doors and the like, you can make up your own panels in any thickness desired, and of any kind of wood you choose. As indicated in Fig. 6, thin panels are made by starting with a core of "crossbanding" veneer. It generally is yellow poplar available in wide sheets in thicknesses of 1/28, 1/20 and ⅛-in. Start with a core of ⅛-in. veneer, then glue sheets of 1/28 or 1/20-in. crossbanding on each side with the grain running at right angles to the grain of the core. The face veneer, which can be any hardwood you choose, is glued to both sides of the "sandwich". If just one side of the panel will be in view, use a veneer with a plain grain on the inside, a fancy grain on the outside. Veneers of plain grain are less expensive than those with fancy grain, but do provide the necessary "balanced" construction required. By "balanced" construction is meant a panel that has veneers of the same thickness on both sides, and of the same wood; this means that the veneers will expand and contract equally when dried or dampened so the veneer panel will be stable. Using dissimilar veneers will produce a panel that will bow or cup on the side that has the wood that shrinks the most when dry. Veneers will absorb moisture from the glues used to assemble panels, and this alone will create an "unbalanced" assembly. If you wish to make thicker panels, as for table tops, large cabi-

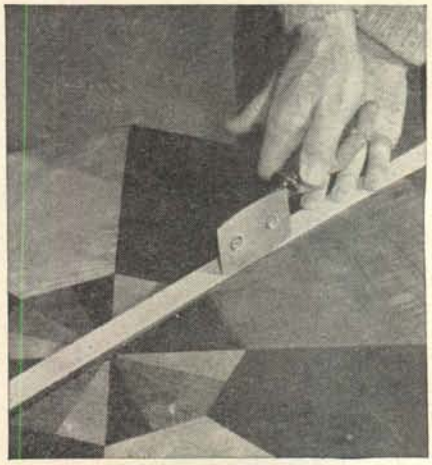


2. Not generally considered for cutting veneers, our radial-arm saw with a plywood blade cut the thin stock cleanly.

3. Triangular-shape pieces were cut, pasted to brown paper, rather than veneering tape, as is usual.



4. When radial-arm saw was used to cut pasted-up pattern it was necessary to hold it down with piece of lumber.



5. When fitting larger pieces of veneer to table around smaller pattern at center, hand veneering saw was required.

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net doors and similar items, use ¼-in. or thicker plywood as a core. Crossbanding is glued to each side, then your finish veneer is applied. You have a wide choice of wood, many not available in commercial plywoods, and the face veneer can be applied in several pieces to produce patterns. The cocktail table is one example, others are in Fig. 6.

Generally this making of patterns is called inlaying, although the pattern is made up ahead of time, then is applied to the wood surface as a single sheet. An example of this inlaying is shown in Figs. 1 through 5. The table top was done in the WORKBENCH Model Shop and the operation is unique in two important ways: First, the veneer was cut with a radial-arm saw fitted with a sharp plywood blade. Second, the glue used is a new contact adhesive that eliminates the need for using clamps or weights.

The inlaying job was done with the "Introductory Veneering Kit" obtained from Albert Constantine and Son, which sells for less than $3.00. Included in the kit is a contact-adhesive veneering glue, and 2 sq. ft. each of teak, walnut, striped African mahogany, and prima vera. In the case of the octagonal table top, the rectangular pieces of veneer were positioned on triangles created by drawing diameters from the angles of the top. About ½ in. of each piece was allowed to project over the edge of the table. The pieces were marked, then cut on the saw, Fig. 2. The waste pieces were long triangles. These were assembled and pasted on a sheet of heavy paper, Fig. 3. An octagon was drawn on the assembled pieces and it was cut out on the saw, Fig. 4. This smaller octagon next was cemented to the center of the table top. The larger pieces of veneer were fitted around this smaller octagon, requiring the use of a veneer saw in some cases, as shown in Fig. 5.

The contact cement is applied to both the veneer and the table top, is allowed to set for about 30 min. A piece of paper, called a "slip sheet" is placed on the table top, the veneer piece is positioned, then the slip sheet is removed and the veneer pressed into place.

An additional advantage of the contact cement, available in various quantities, is that it permits "unbalanced" assembly of veneer panels. Because the adhesive is waterproof, and contains no water, it does not provide water for the veneers to absorb. The expansion of veneers due to absorption of moisture is one of the main factors causing bowing and warping of unbalanced panels. △ △

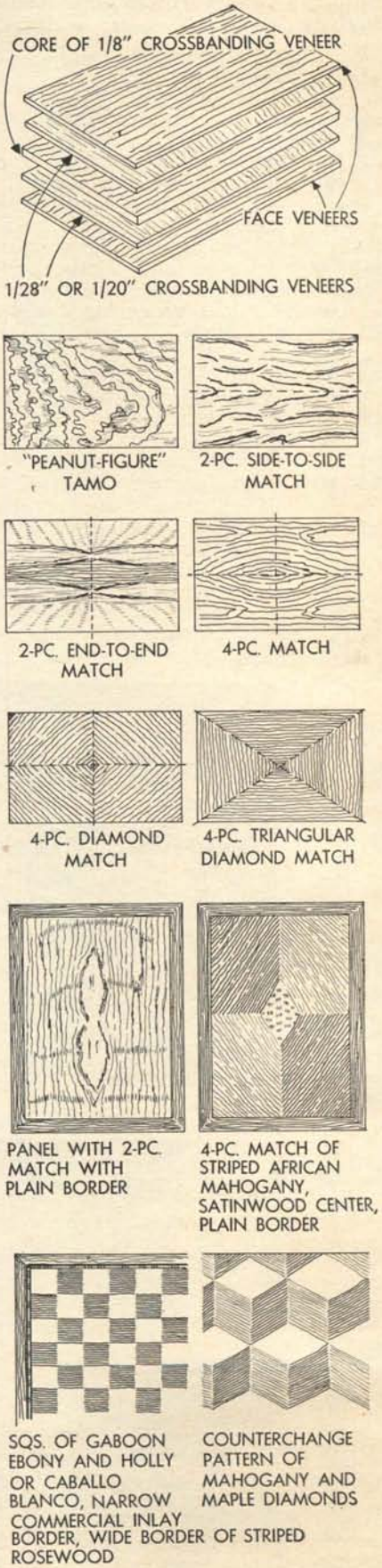
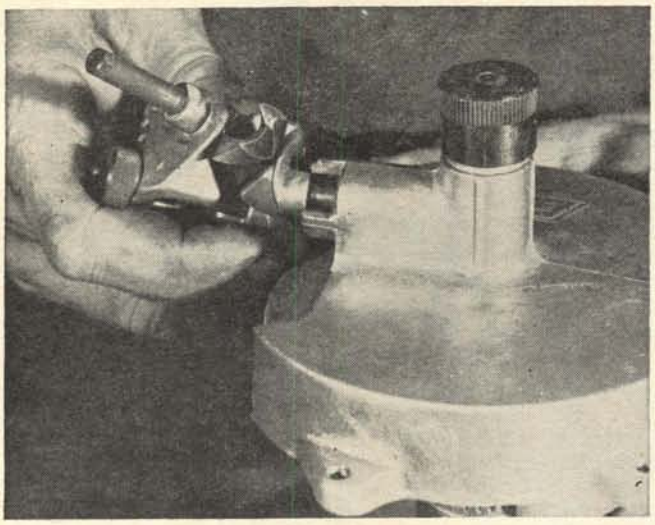


FIG. 6

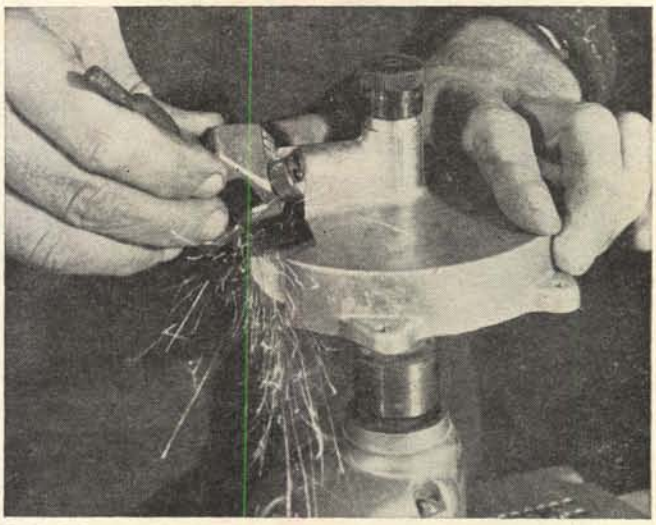
PORTABLE DRILL GRINDER

MOST UNUSUAL and practical is this tool, that permits sharpening drill bits, as well as the cutting edges of chisels and other metal and woodworking tools with a ¼-in. drill motor as the power source for the stone.

When we first tested this tool in the Model Shop we found the instructions somewhat confusing; these instructions have since been re-written and new illustrations included. Our photographs show the drill motor chucked in a vise, which is best in the shop. However, in the field the unit can be fitted on a drill motor held by hand. With a little practice you can do an excellent job of sharpening bits. For information and prices: Port-A-Point, SWG Corp., 903 Wrightwood Ave., Chicago 14.



Shouldered ½-in. drill bit, (½-in. bit is capacity of unit), is sharpened with unit. Bit is sharpened on side of stone.



End of bit projects from chuck; it is incorrectly positioned here. Some practice and experimenting required before doing best job.

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1. Tongue-and-groove joint is effective when edge-gluing a number of pieces to make table top, similar projects.

Basic Cabinetmaking: Joinery Part II

2. Fence is adjusted so that two passes, turning stock end for end, permits saw blade to make groove of correct width.

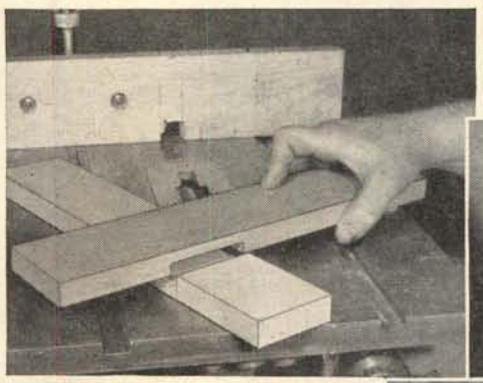
3. Pieces of scrap plywood are used to position stock correct distance from fence to make tongue to fit groove.

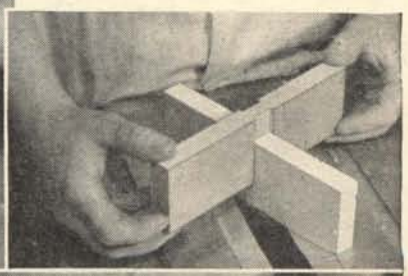
THERE ARE FANCY JOINTS that are pretty much exercises in woodworking skill. In this article, as well as Part I in the last issue, we have tried to avoid these "clever" joints and present joinery that has practical application in the many projects the average home-shop owner makes with wood.

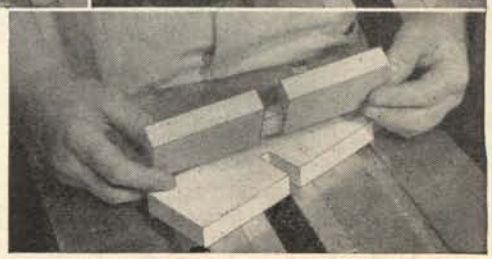
A tongue-and-groove joint, Fig. 1, is almost basic when edge-joining a number of pieces of solid stock to produce a larger piece, such as for a table top, side or top of a cabinet and similar items. To make the joint a slot, or dado, is cut in one edge of each member, Fig. 2, using a dado or regular saw blade. Note that the saw operator is using a scrap of stock to hold the work against the fence in a safe manner. The dado is made half the thickness of the stock, so the tongue is made the same width, Fig. 3, using scrap stock to space the work the correct distance from the fence.

Center lap, Fig. 4, is a joint used when members of a structure cross each other, and it is necessary to keep all members flush. Examining the photo shows how this simple joint is made. A center lap on edge with a groove, Fig. 4, is slightly more complicated. A notch is cut half-way through the stock, and the remaining portion is narrowed to half its thickness by sawing a shallow dado on either face. A slot is cut in the other member, half its width, just wide enough to fit over the narrowed portion.

The housed-dado joint, Fig. 5,

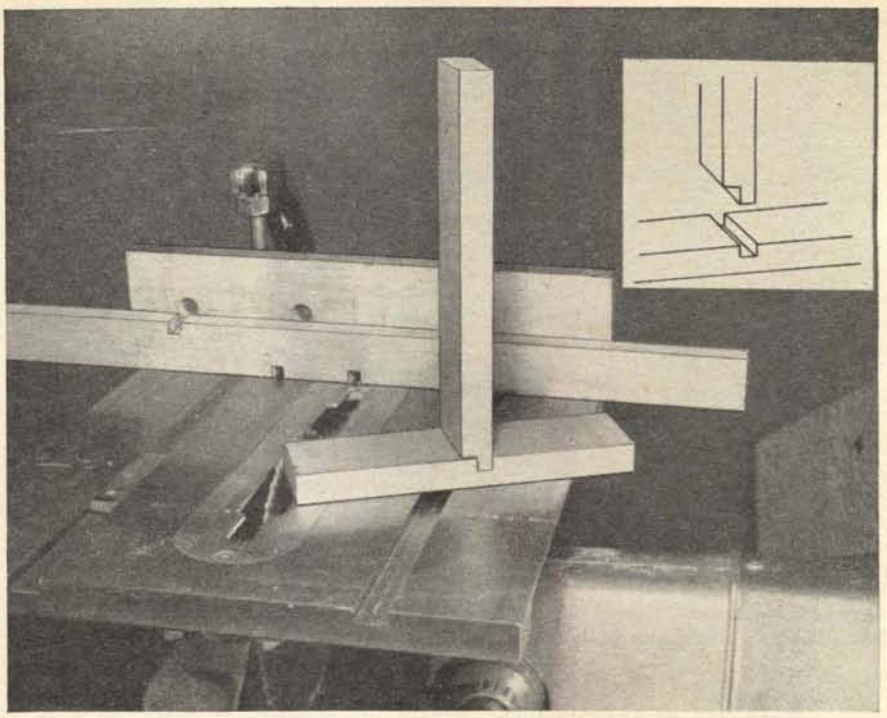






4. Center lap is used with stock flat, or with it on edge. Note that edge joint requires grooving one member.

5. Housed dado is simple but rigid joint. Rabbet is cut on end of one member, groove is cut in other member to match.



consists of a dado cut in one member to accommodate half the thickness of the other member. The half thickness is produced by cutting a rabbet on the end.

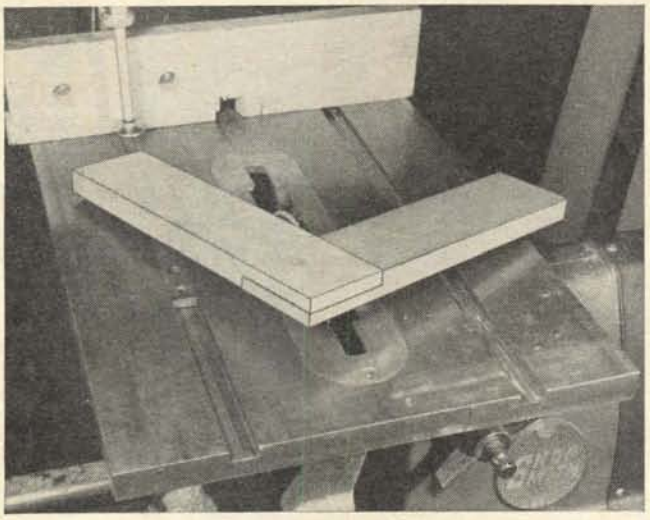
The end lap, used at the corners of light frames, Fig. 6, is cut in the same manner as a center lap.

A tee lap, Fig. 7, is similar to a center lap on edge, one member ending flush with the other piece.

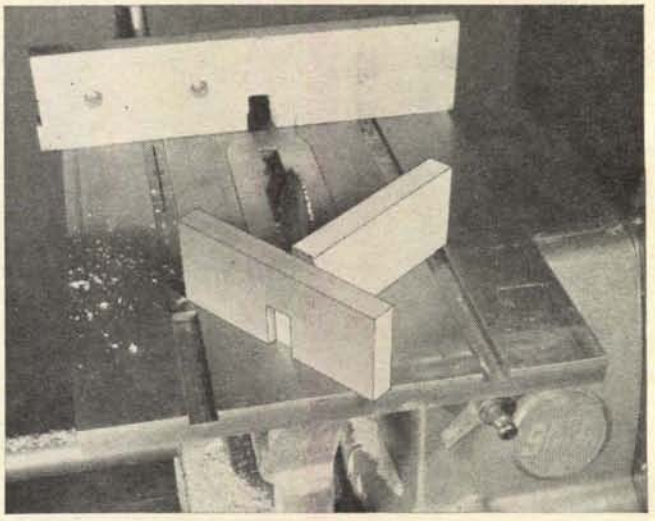
The dado box corner, Fig. 8, is another quite simple joint. A dado is cut in one member to accept half the thickness of the other member; the latter is produced by sawing a rabbet in the end of the stock.

Figs. 9 through 12 show the milled dado box corner. A dado is cut in the end of one member, the face of the other. One side of the dado on the end of one member is cut away so the adjacent piece fits flush, as indicated. The milled dado, as well as all joints, should be measured and layed out accurately. To assure a tight fit, make dadoes slightly narrower than the projections that fit in them. This should provide a snug, "push" fit. If a joint is too tight, it is impossible to keep much glue in it when assembled.

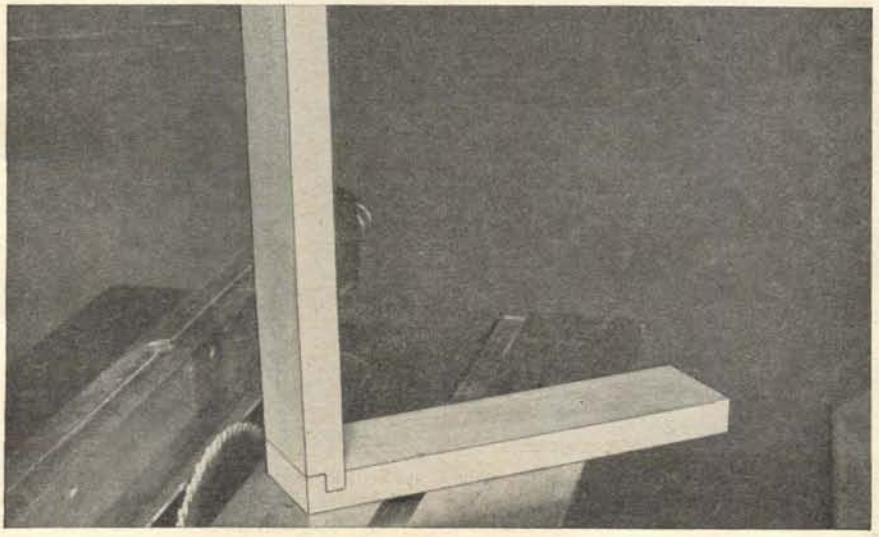
The rabbeted bevel joint, Figs. 13 through 15, is most easily cut with the aid of a shaper head, as in



6. End lap is same as center half-lap on stock positioned flat. Wide rabbet cut half the thickness of each member brings the pieces flush. Joint is used for light door frames.

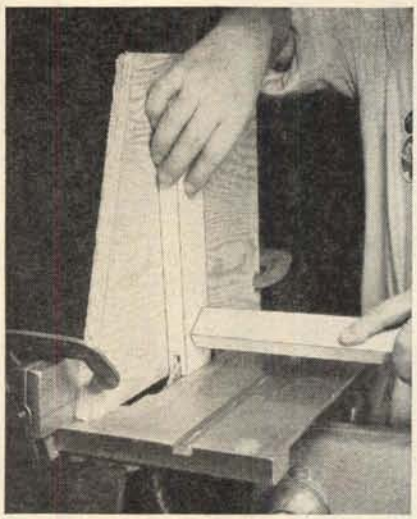


7. For tee-lap joint members are on edge. Half the width of one member is notched, groove to accommodate resulting projection is cut in the other. Joint usually glued, seldom is nailed.



8. Often used to join drawer sides and back, dado box corner is made with dado head. Make dado narrower than rabbet.

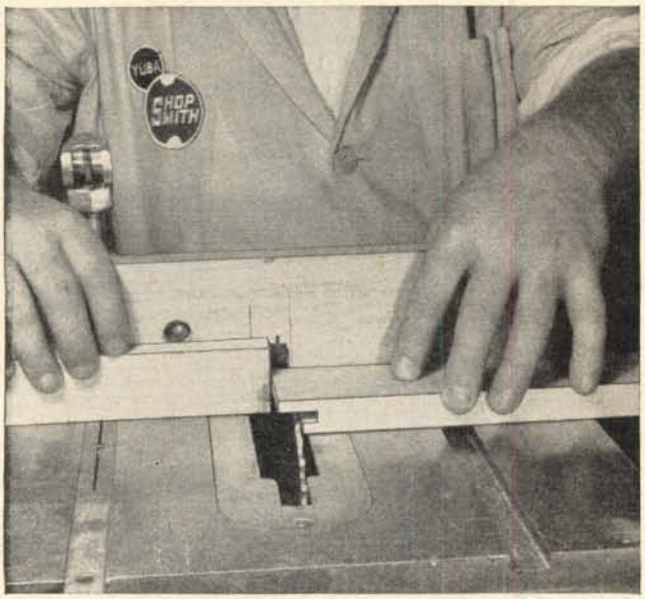
9. When end grain is to be shown at side instead of front of frame, milled-dado box corner is used; strong, rigid joint.



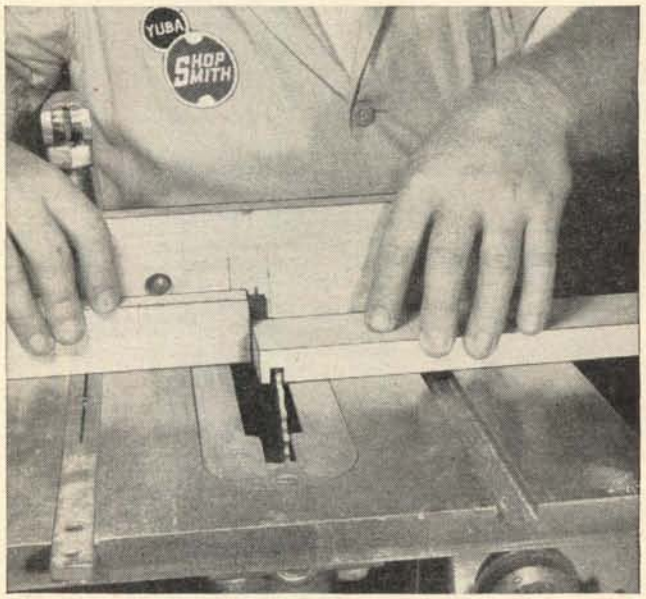
10. First step in milled-dado joint is to cut dado in end of one member that is as deep as full thickness of other member.

Fig. 14. With some care, a regular saw blade set at 45 deg. could be used to make the bevel. Even with the shaper bit it is necessary also to use a dado blade to widen each rabbet to accept its opposite member. As indicated in Fig. 15, the edge of the dado cut should be the thickness of the stock, plus 1/32 in. away from the edge of the stock. This assures a tight fit of the faces of the bevel to produce a neat, almost invisible joint at the corner of the members, as in Fig. 13.

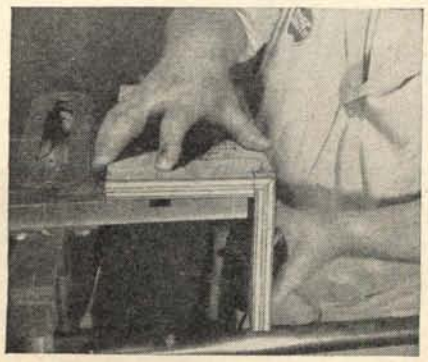
For shadow boxes, deep picture frames, some types of cabinet work, a straight bevel joint, Fig. 16, is used. The table or arbor is set at 45 deg., the miter gauge at 90 deg., and the cut is made. A single, thin line is all that shows at the corner of pieces joined. △ △



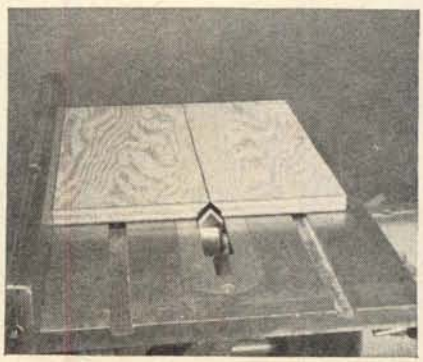
11. In second step, stock on side of dado is cut to provide projection one half the thickness of other member as shown.



12. Third step is to cut dado in other member, positioned so that it fits over shortened side of dado in first piece.



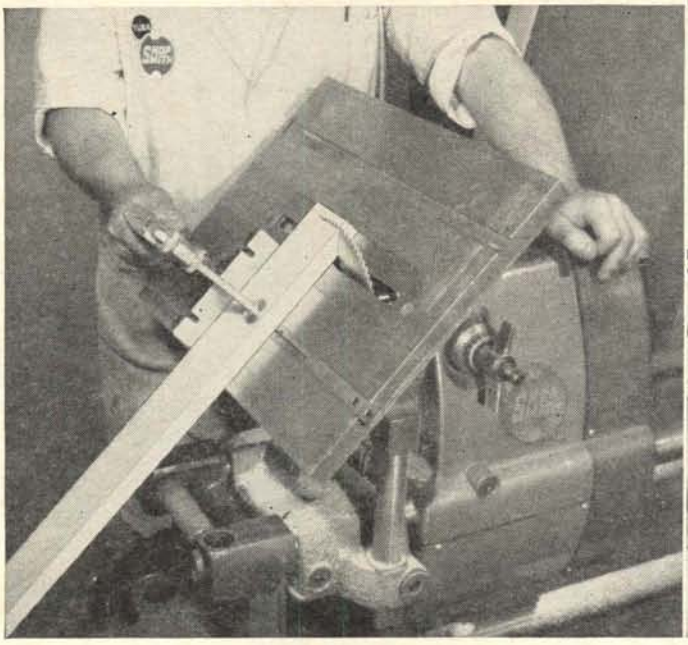
13. Rabbeted-bevel joint is stronger, more "self-positioning" than regular bevel, has greater surface area for gluing.

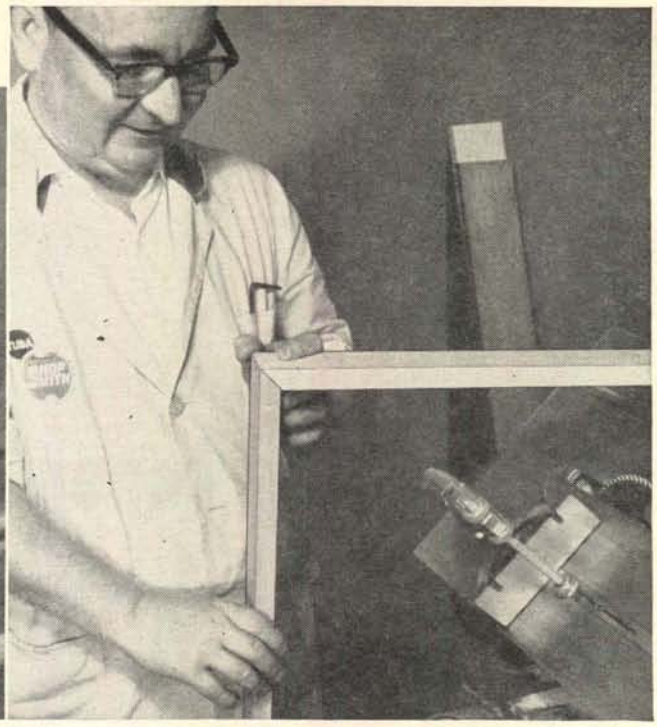


14. Shaper head is ideal for rabbeted-bevel, two pieces of stock being centered over the head to cut rabbet and bevel.

15. For best fit of rabbeted bevel, edge of cut made with dado head (along with original rabbet), is thickness of stock.

16. Regular bevel joint, used for boxes, deep picture frames and the like is made by cutting 45-deg. angle on ends of stock, miter gauge at 90 deg.





BEVELS AND MITERS

Figure	Sides	Ripping (Tilt Table)	Crosscutting (Set Miter Gage)	Figure	Sides	Ripping (Tilt Table)	Crosscutting (Set Miter Gage)
Triangle	3	....	30°	Octagon	8	22½°	67½°
Square	4	45°	45°	Nonagon	9	20°	70°
Pentagon	5	36°	54°	Decagon	10	18°	72°
Hexagon	6	30°	60°	Undecagon	11	16½°	73½°
Heptagon	7	26°	64°	Dodecagon	12	15°	75°

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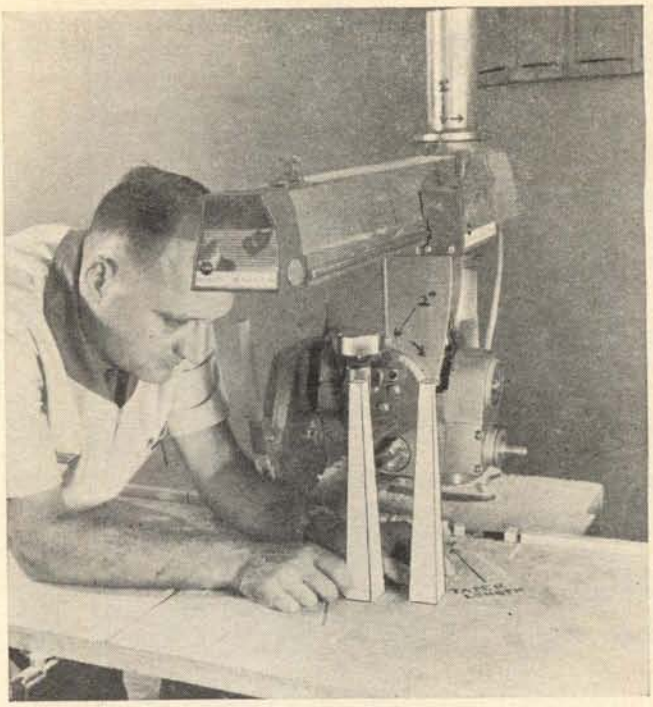
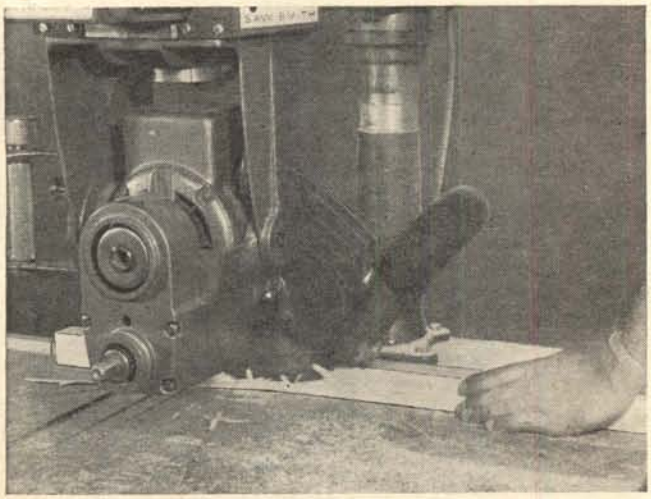
1. Duplicating square, tapered legs is no problem on radial-arm saw, no taper jig is required to produce the legs.



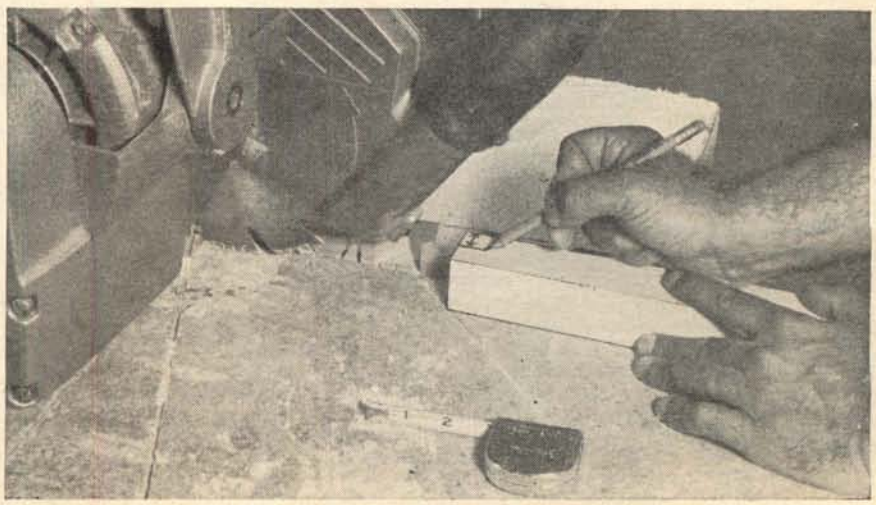
Cutting Tapers with a RADIAL-ARM SAW



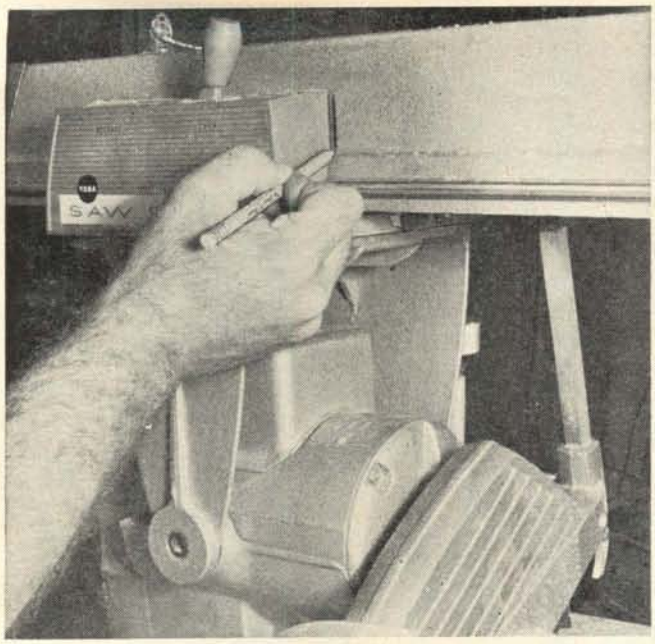
2. First step in cutting legs is to make sure stock is true and square. Legs here are cut from stock 1½ in. square.

CUTTING TAPERED LEGS IS EASY on a radial-arm saw, and no taper jig need be made or purchased. While an angle of 4 deg. is shown on the example in this article, Fig. 1, this can be changed to suit. Just keep in mind that cuts made after the two taper cuts must be one-half the number of degrees used for the tapers.

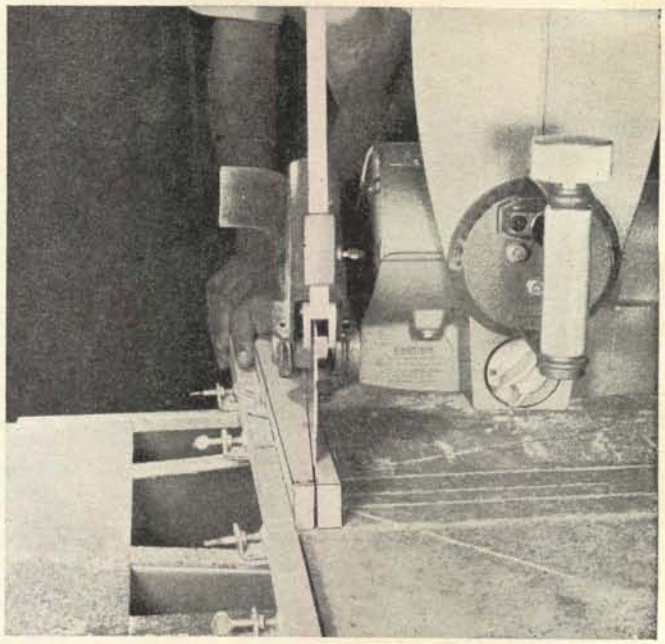
The first step, Fig. 2, is to square up the stock to be used. Second, mark the width of the bottoms of the legs, Fig. 3. Set the saw motor for inboard rip and move the saw arm 4 deg. to the left, as you face the saw (or whatever angle chosen), and lock the arm in that position. Move the saw motor so the blade is the distance from the fence required to make the correct size for the leg bottom and mark the motor position on the arm, Fig. 4. Each time a taper is started the motor is returned to that setting. The carriage lock now is released and the stock is fed slowly into the blade, Fig. 5. Because of the angle of the arm the saw motor will move outward, produc-



3. Bottom end of leg is marked to be ¾ in. wide, leg will taper to 1½ in. Saw is set for inboard rip, arm set to 4-deg. position.

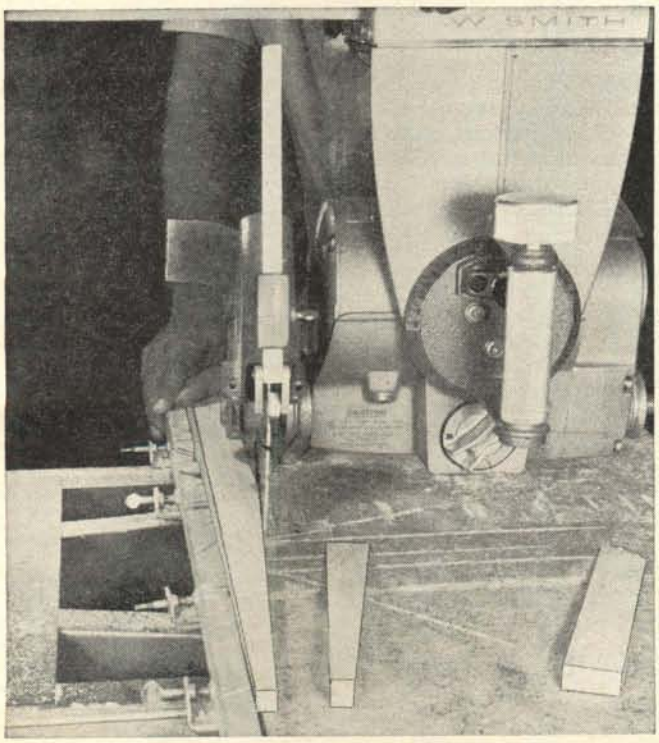


4. Saw blade is positioned ¾ in. from rip fence, position of motor is marked on arm to permit making duplicate tapers. Motor is started at this point for each leg.

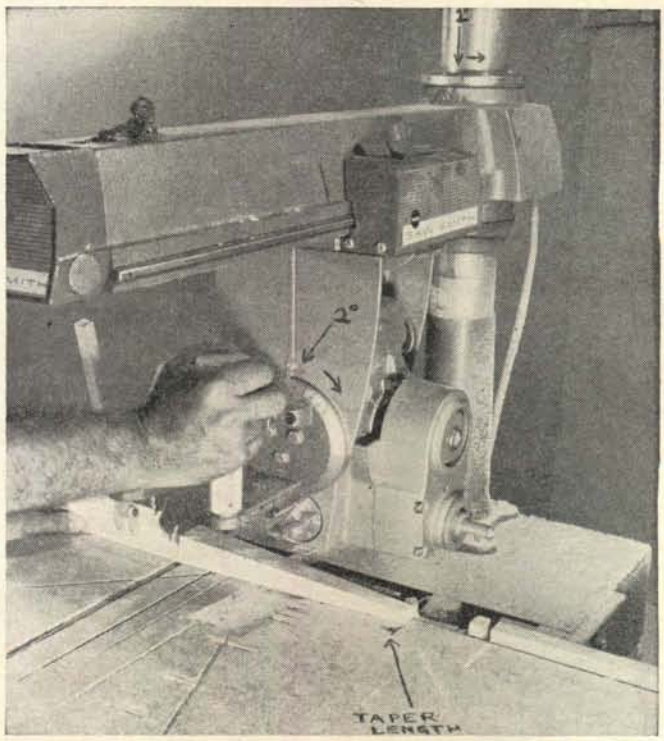


5. Cutting first taper: Carriage lock is released and motor is free to move. As stock is slowly fed into the blade, motor moves outward on taper path. At end of cut, pull stock back.

ing the taper. For easiest handling, stock should be more than twice the length of two finished legs. Tapers can be cut for two legs before the stock is cut to make the legs, and the extra length keeps your hands clear of the blade. For second taper, Fig. 6, stock is turned 90 deg. (this keeps uncut side down), and run through the blade slowly. At the end of the cut pull the stock back toward you, rather than pushing it all the way through. Final step is to rotate saw motor to cut-off position and move arm from 4 deg. left to 2 deg. right. Also tip motor 2 deg. so blade moves to left. (Note that these settings are one-half taper setting.) Uncut edge of legs are held against fence, moved from left to right. Cut thus is made on small end first, then large end. Mark length of legs on table as indicated, so all legs are same length. △ △



6. For second taper cut, shown here just completed, turn stock one quarter turn, set motor back to position marked on arm. Start blade at ¾ in. (or desired width) and push stock.



7. To complete tapering operation, ends are cut off. Set motor at cut-off position, move arm from 4 deg. left of center to 2 deg. right of center. Also, tip motor 2 deg.

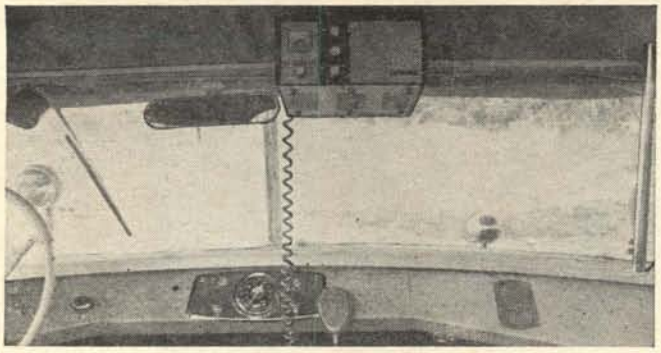
Typical of hundreds of marinas equipped with CB is the Eagle Rock Boat Dock on Table Rock Lake in the Ozark region.

CB in Boating

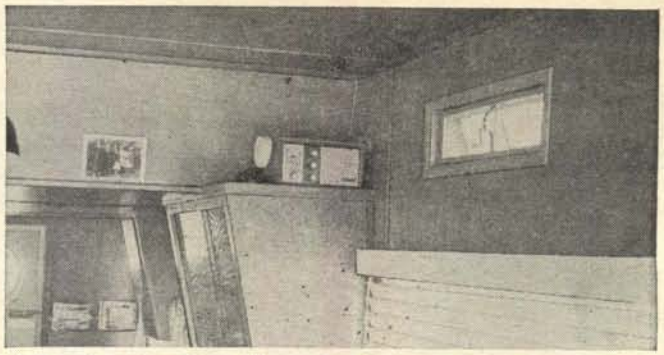
FOR MANY YEARS radio communication has been the lifeline for commercial boats and for larger, privately-owned craft. With the advent of Citizens Band radio, personal communication has been made available to boat owners of more modest means, down to, and including, small utility boats used by sportsmen for fishing. Throughout the country, on the coasts, rivers and lakes, marinas, boatels, restaurants, yacht clubs and others providing service directly to boat owners have installed CB radios and monitor channel 13, (channel 13 is considered the channel for marine use in most localities), for the convenience and safety of their customers and/or members. This means that Mr. and Mrs. average boat owner can increase their pleasure in boating, and their sense of security while afloat by making use of CB radio on their craft.

With the single qualification that the microphone should be within easy reach of the helmsman, there are few restrictions on the location of the radio set in a boat. Because there is such a tremendously wide variety of designs in water craft, the ingenuity and construction talents of the boat owner can be utilized fully in making the installation of a CB unit. Sets have been mounted through the instrument panel in runabouts, under the panel, directly against the panel in various locations, against the side of the boat, against a seat, on the back of the front seat and in dozens of other locations. On cruisers CB sets have been mounted so they were accessible from both the cabin and

A glance out the window reveals local weather conditions, the transceiver tells of boaters in trouble.



Representative of the manner in which a CB transceiver is mounted in this type boat is this installation where unit is above windshield, against overhead of cabin in this day cruiser.

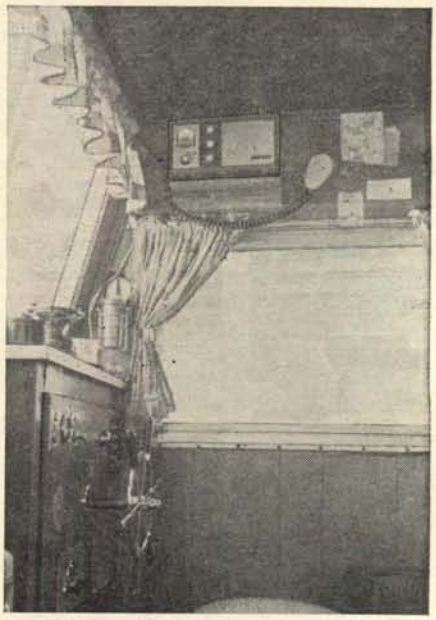


Just a few steps from the cockpit is this CB unit mounted inside houseboat cabin, where it also is handy to persons inside. Houseboats present a great variety of possible installations.

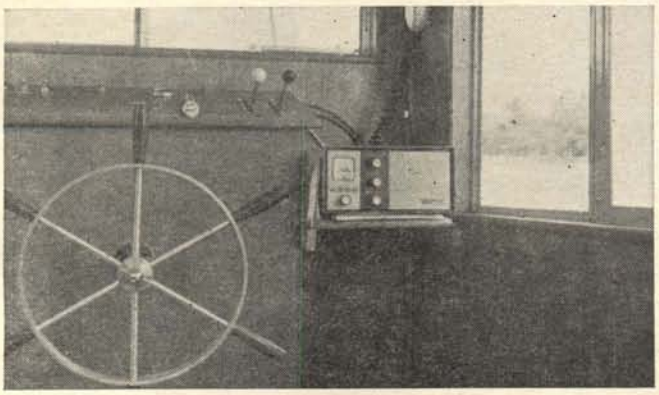
the cockpit. Houseboats provide the widest choice of locations, and installing a CB radio can be a challenge to the owner, whether he be a novice or a master craftsman. We have made some interesting houseboat installations, a few examples of which are shown. CB units in a houseboat must, of necessity, have a multi-voltage power-supply capability. This is because, when underway, the set must be powered from the craft's generator, while electricity is supplied by a 110-volt line from the dock when the boat is tied up. Most quality CB units have the multi-voltage factor built into their self-contained power supplies. A change of power cords is the only modification necessary when switching voltages.

After the location of the unit has been decided, the antenna position must be determined. It is desirable always to have as short a transmission line as possible, which means the antenna should be mounted as close to the transceiver as is practical. The longer the lead from the set to the antenna, the greater the chances of it picking up extraneous signals. Next step is to provide power to the set, and an adequate ground for both power and antenna. In wood and fiber glass boats a separate wire must be run from the battery or other power source back to the set for a ground, and one must be run to the antenna. In fresh water it is considered that 1½ sq. ft. of ground, (counterpoise), is required per watt input to the radio. It is preferable to have a technician make this installation, as an adequate ground plate for proper antenna performance and certain noise suppression units must be installed.

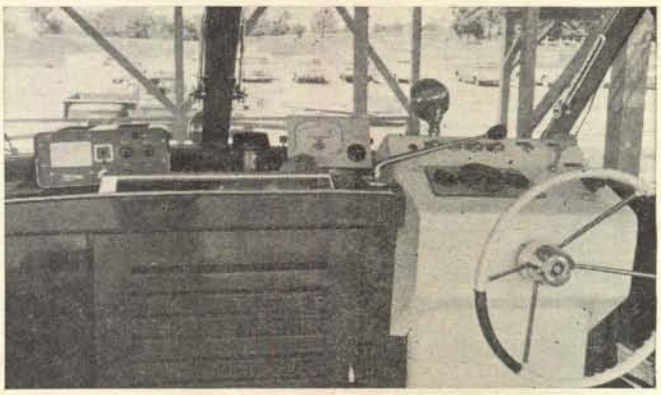
After the CB unit has been installed and adjusted, it is ready for operation. There are many circumstances in which the use of communications will prove invaluable to a boat owner. There will be times when you run out of gas, have engine trouble, or just plain get



In this houseboat transceiver is on shelf above wheel, still within handy reach of helmsman or others in cabin of boat.



Shelf was built alongside instrument panel of this houseboat to provide spot for CB transceiver. Every kind and size of boat presents different problems in locating the radio.



Logical spot for the transceiver in this 28-ft. Coast Guard Auxiliary is on the instrument panel, near other electronic equipment. Note that mike is within easy reach of helmsman.

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lost. Illness or injury to a member of a boating party is not unknown, and a quick radio call could bring a fast rescue boat with a doctor, or arrangements could be made to have a doctor on the dock waiting for you when you return.

Then there is always the boat that does not have a radio. If they get into trouble and are near you, you can call for help for them.

Because channel 13 is reserved for emergency marine calls, use another channel when making calls from one boat to another. Always leave your name and CB call number with the land-based operator with whom you will be working before you shove off. Any calls for you can be routed through his CB radio to your craft. You then will never be out of communication with your family, friends or business when you are on a boating trip. Keep in mind that the land-based stations that provide CB monitoring do not charge for this service; show your appreciation by patronizing their facilities.

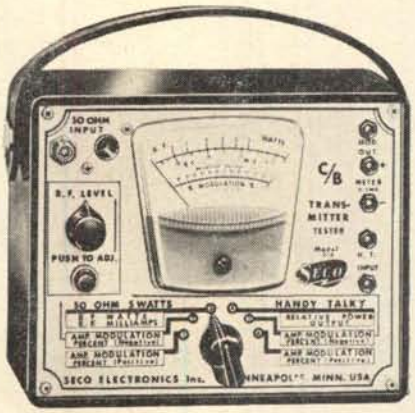
There are countless small craft who do not have electrical power available. This need not prevent owners of these boats from having radio communication aboard. There are many 100 milliwatt, battery-operated portable units from which to select; reliable communications over shorter distances can be maintained with these hand-held CB units. Because over-water transmission and reception does not have the problems of interfering structures and hilly or mountainous terrain, the smaller CB radios will provide excellent communication over much greater distances than when used over land.

Proper use of CB radio in boating can help reduce tragedy on the water, and quick and reliable communication becomes constantly more important in view of the ever-increasing numbers of people turning to boats for recreation. △ △

TEST REPORT

We have field-tested Seco Model 500 Two-Way Radio Tester, (not shown), and find that it is a valuable tool in quickly determining the frequency, (approx.), and activity of an unknown crystal. It also makes receiver alignment to a simple operation.

We also tested the Seco Model 510 Transmitter Tester and find it most revealing in determining transmitter deficiencies.

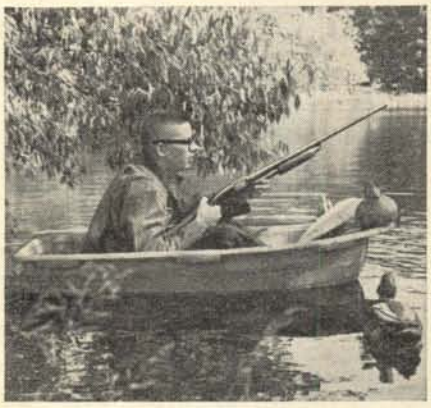


In testing the Seco Model 520 Antenna Tester we observed the simplicity of operation and the ease of obtaining a correct match between the radio transmitter, line and the antenna.

The Seco 511A Attenu-Load is an excellent 50-ohm dummy load and should prove of value to the CB operator and amateur alike.

Ten-Dollar Duck Skiff

STAN HENSCHEL



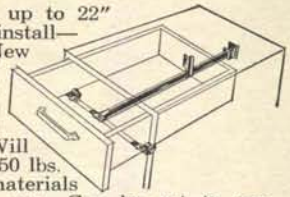
There is plenty of freeboard for safety with a 160-lb. hunter and all his gear in the plastic craft. (Would recommend a life jacket; water is cold in fall.)

GET READY FOR DUCK HUNTING next fall by fitting out a low-cost, lightweight skiff now. Toy plastic boats about 6 ft. long can be purchased for around seven to 9 dollars, including a paddle. First, paint the boat with paint such as used on a duck skiff, or with fiber-glass resin if you want to strengthen the hull. Second, cut a piece of ¼-in. plywood to fit the bottom of the boat, making it about 3 ft. long. It provides a safety factor by distributing the weight of the hunter over more of the bottom. Guns, decoys and gear can be carried easily in the little craft. There is no flotation, so a life jacket is a must.

Because of its small size and extreme light weight, the craft will fit in the trunks of many cars, or can be carried on the roof. Even on a compact car there is room. △ △

A coat of paint covers the boat inside and out, for better appearance. For strength, coat it with fiber-glass resin.

DRAWERS SLIDE EASIER-QUIETER with SINGLE-TRACK DRAWER SLIDE



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Do-It-Yourself Trampoline

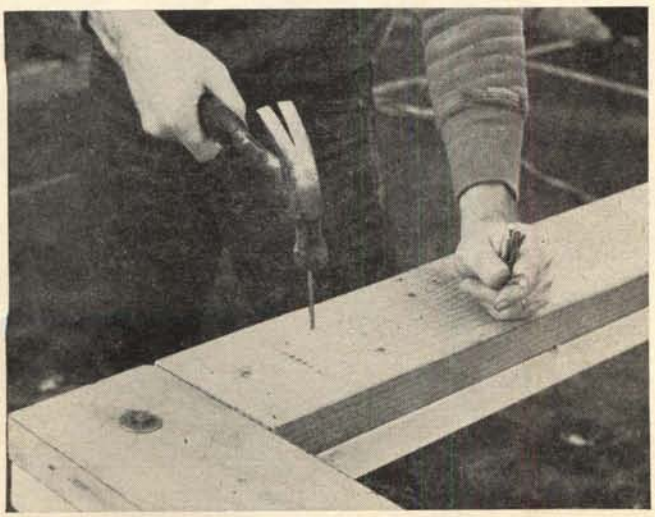
WARNER BENSON

1. Up in the air and touch your toes! Youngsters took over the trampoline the moment it was done. They had been taught techniques in school, however.

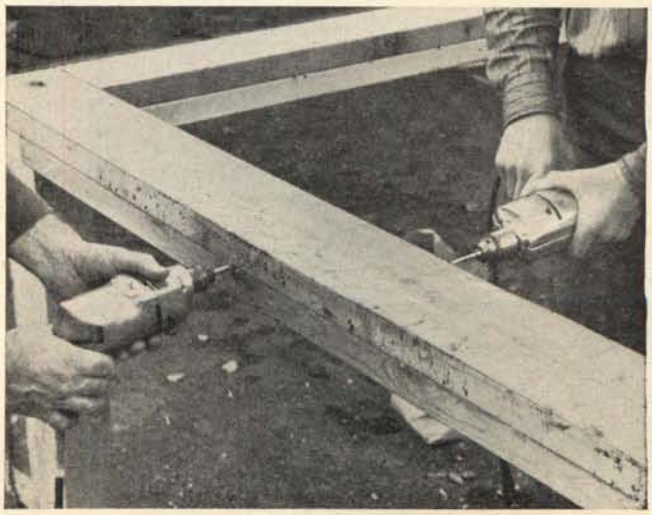
NOT ONLY ARE TRAMPOLINES A LOT OF FUN for youngsters, Fig. 1, they now are used in many schools as part of the physical-education program. Adults, too, can benefit from a workout on the springy canvas. It is necessary only that they approach the jumps and flips with the same caution and restraint that any out-of-condition grownup should exercise when attempting strenuous athletics.

The biggest drawback to owning your own trampoline has been the rather high price tag. This no longer is true, as there now is a kit available that permits assembling a large-size unit for about half the cost of a ready-made trampoline. The kit consists of 61 springs, 60 eyebolts, washers and nuts, a nylon-canvas bed and an instruction manual. The extra spring is to aid in pulling the other springs when assembling the bed to the frame. The trampoline kit we assembled had a canvas measuring 5 x 10 ft., Fig. 7, and there is a larger unit with a canvas measuring 6 x 12 ft.

As per the instruction sheet included with the kit, we rounded up four 2 x 6s 13 ft. long and four 2 x 6s 8 ft. long. Although instructions called for just 60 nails, 8d in size, we varied from this to the extent of using 16d box nails and driving an additional number near



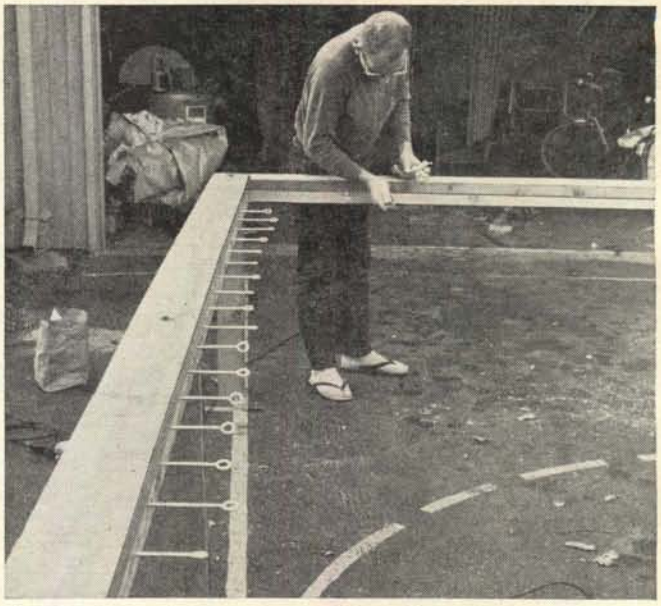
2. Our 2 x 6s were construction grade, slightly bowed and twisted, so we used a generous number of 16d box nails.



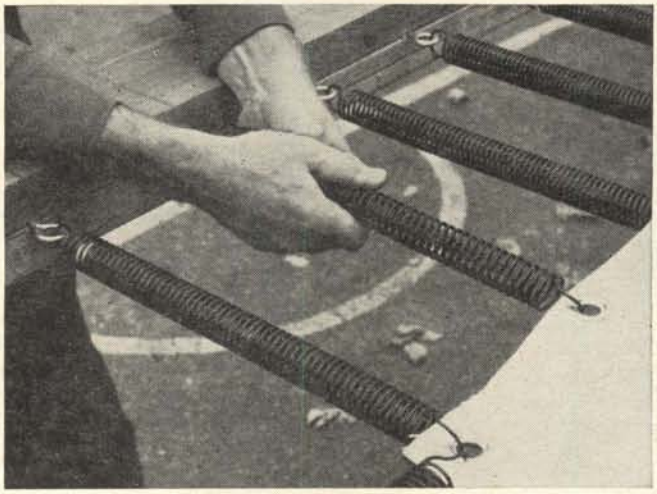
3. After marking the locations of holes for the eye bolts, two drill motors were used to speed the job of boring the 60 holes.

each corner, Fig. 2. The nails projected slightly from the bottom 2 x 6s and were clinched over. Corners of the frame, Fig. 6, were overlapped according to the instructions to assure a rigid joint. Legs for the trampoline frame were to be cut from 6-in. fence posts, following the instructions. Our favorite lumberyard had no fence posts and we settled for a 14-ft. length of fir 4 x 6. The posts would have been less expensive and perfectly adequate, but we believe that the 4 x 6 legs are somewhat more stable. Braces across the end legs are 1 x 2s in the instructions; we used 2 x 4s, but only because we happened to have a few lengths left from studding a wall. We do believe another brace should be used between the center legs. An 8-in. lag bolt is fitted down through the frame members and turned into the tops of the legs. This single lag bolt is not strong enough to withstand much side pressure and braces are necessary, Fig. 6.

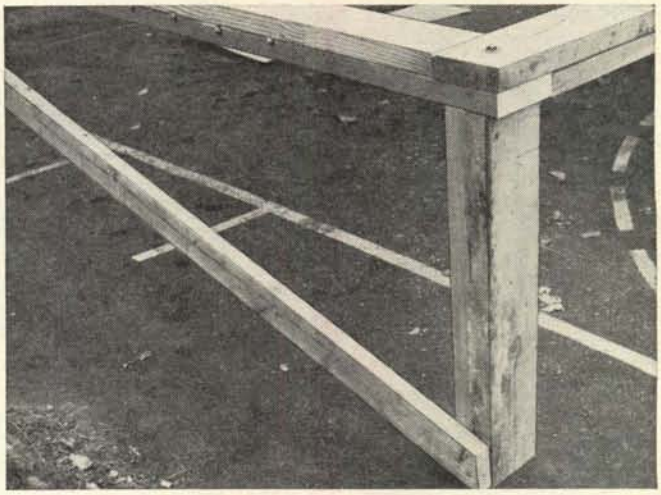
The longest job in assembling the kit is drilling the necessary 60 holes for the eyebolts. We used two drill motors, Fig. 3, to speed the job. In each end of the frame there are 10 holes, along the sides there are 20 holes. The instruction sheet gives a figure of 22 in. from the frame end for the location of the first hole, the holes being spaced 6 in. apart. This did not work out evenly, so we centered the holes in this manner: We measured to the centers of the frame ends and sides, then marked 3 in. on either side of the centers.



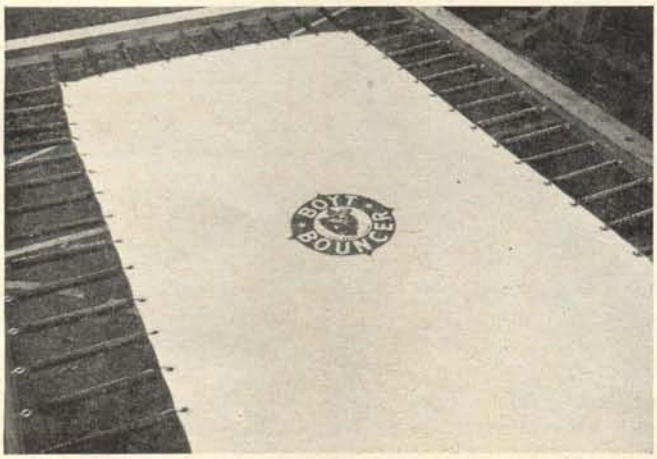
4. The 60 eye bolts are tapped into place, flat washers fitted on the ends, nuts turned on with a wrench.



5. Two springs are fitted in each corner of canvas, then others are pulled in place. Springs are not difficult to stretch to length.



6. Although 1 x 2s were recommended for bracing the end legs, we used 2 x 4s we had on hand.



7. To keep the nylon canvas white and clean, make sure everyone who uses the trampoline takes off their shoes.

These were the center two holes, and we located the rest of the holes on 6 in. centers from them. The holes are drilled between the upper and lower 2 x 6s, Fig. 3, and where the planks were not tightly together, we drove additional spikes and clinched them on the under side to force the planks together. Eyebolts then are tapped into the holes with a hammer, after being fitted in place, Fig. 4. Washers and nuts were fitted on the eyebolts, then the extra length of bolt was cut off with a hacksaw. An extra spring is provided to assist in stretching the springs, starting with two in each corner, Fig. 5. We found no need for the extra spring.

When the trampoline is finished you will have two problems: First, to keep the canvas clean everyone must remove his shoes. An old blanket beside the trampoline took care of that. Second, is a storage problem. We kept the unit in a two-car garage during the summer, to keep it out of the rain. This means keeping the cars outside. In the winter we removed the legs and braces and leaned it against the wall.

For more information on the trampoline: Boyt Company, Des Moines 6, Iowa. △ △

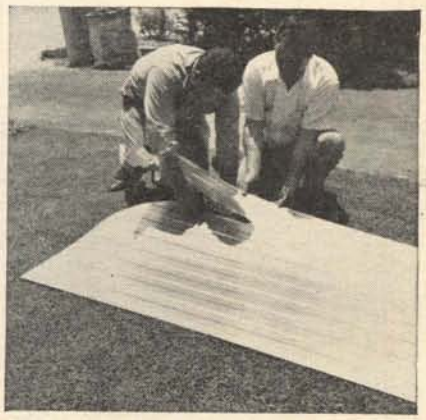
Camper is neat and attractive, fastens to pickup bed with just four bolts. After a vacation or a weekend of fun, two husky men can lift the camper off the truck and put it aside so truck can be used for workaday jobs. Sheathing is pre-finished.

Low-Cost Pickup Camper

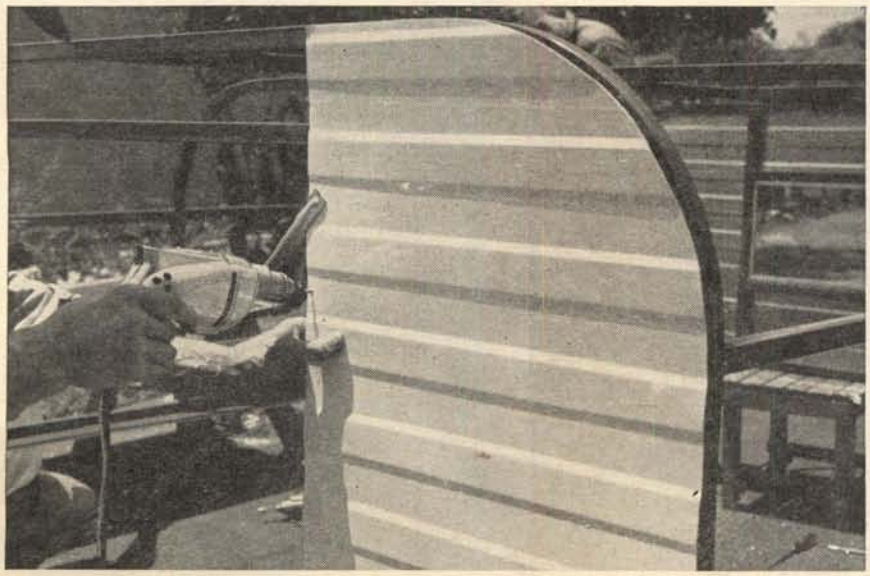
JOE H. WHERRY

You may have dealer near you, camper kit can be picked up there, hauled home on the pickup truck.

Steel frame of camper is all welded construction. Although not heavy it is somewhat awkward to handle.



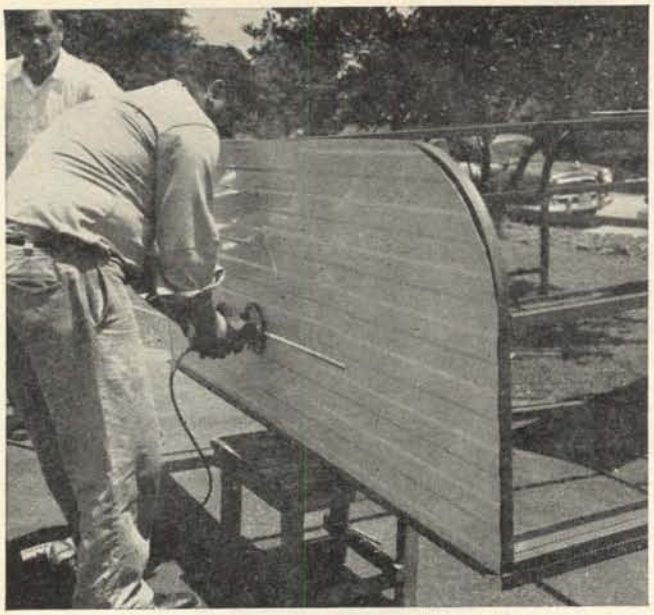
Camper kit contains all aluminum sheathing required. It is pre-marked for easy cutting with tin snips.



After aluminum sheathing has been cut to shape from marked panels it is clamped in place over the steel frame and holes are drilled for sheet metal screws that are used for attachment. Here panel is being attached to rear of one side of frame. Two persons can complete camper in half a day.

YOU CAN SAVE about half the cost of a camper for a pickup truck by building it yourself from a kit now available. Included in the kit is everything required: Aluminum sheathing, windows, window drip caps, door hinge, door closer, all nuts, bolts and screws and a completely finished, all-welded steel frame. There is a kit for every make and model of pickup truck. Also included with each kit are excellent working drawings and step-by-step instructions. Two men can assemble the kit in half a day. Shown in photos on these pages are the main steps in the assembly.

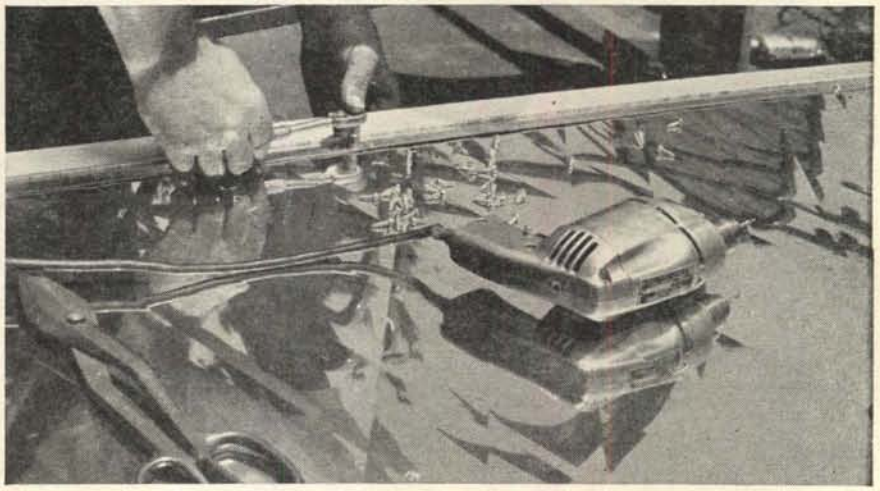
We would suggest, first of all, that the camper frame be sprayed with fast-drying lacquer. An aerosal can will do the job. While the frame is drying, cut the front and rear panels that are pre-marked with allowance for a small amount of waste. After installing front and rear panels, put on the large alumi-



Power tools, such as power hacksaw or "nibbler" will speed job of cutting holes in aluminum panels for windows, but tin snips will do as well. Hole is punched for insertion of tin snips.

After window holes are cut, windows are used to check fit, then holes are drilled through frame while helper holds window in place. Frames are fitted over weatherstripping.

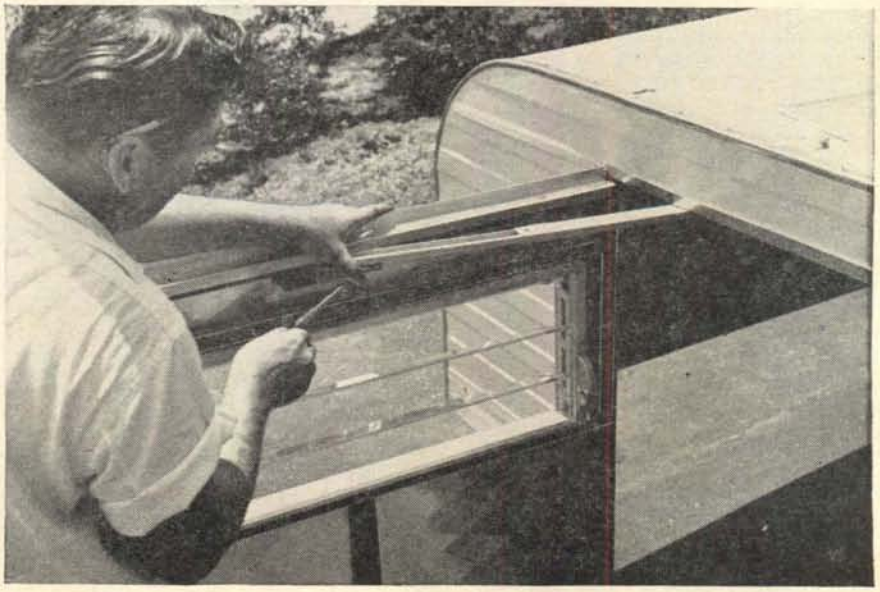
After all sheathing is screwed to frame, weatherstripping is pressed along all edges, then trim molding is drilled,



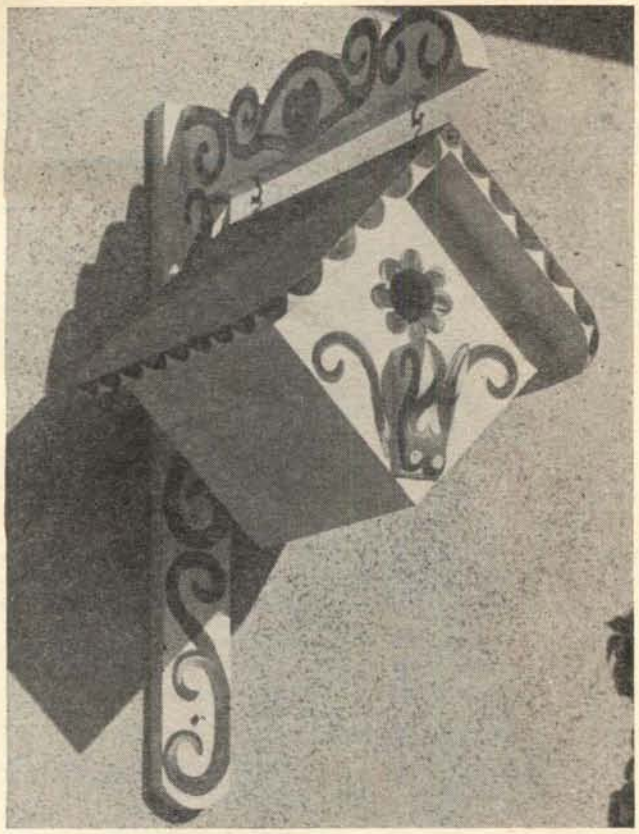
Door frame, also pre-finished in the kit, is sheathed in a contrasting design of aluminum. Here builder is attaching long piano-type hinge to the edge of door. Use of this type of hinge assures that door stays straight and aligned in frame.

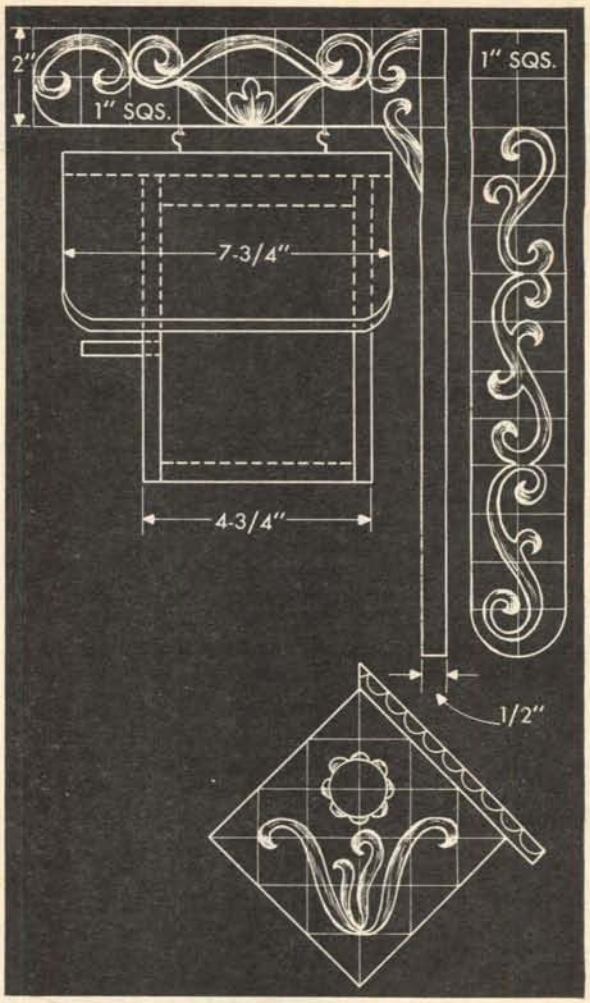
num sheet that covers both sides and the top. It is not pre-marked, so place it on top of the frame and unroll it. Start the screws at the centers of the top at each end of the sheet and work down each side. Keep the metal pulled tight and smooth. Trim the panel after it is in place. When all sheathing is on and the door and windows are installed, molding is applied to the edges over weatherstripping.

The camper can be bolted to the truck bed, or held in place with outside turnbuckles. For more information and prices write: MacDonald Camper Kit Co., 2029 Central Ave., El Monte, Calif. △ △



One of the last jobs in assembling the camper is to install the door stop. This quality item is provided in kit.



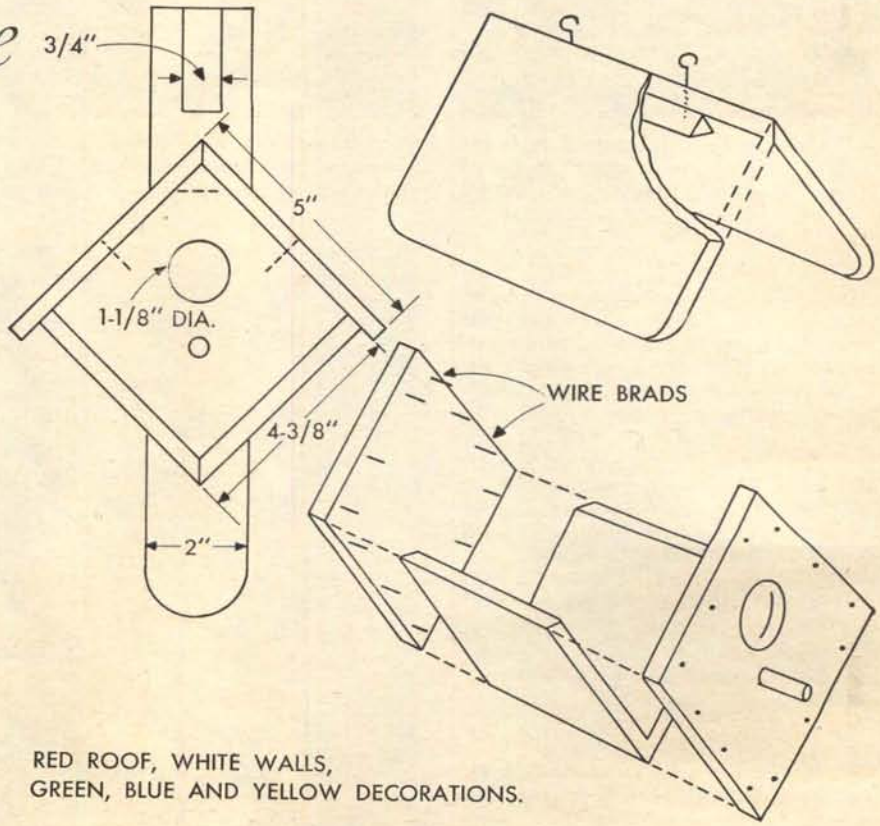


Swedish Wren House

HI SIBLEY

FOR THE JUNIOR CRAFTSMAN, or anyone interested in an attractive one-evening project, this picturesque little wren house is an excellent project. (That one-evening time schedule does not necessarily include painting time.)

All pieces for the wren house are cut from ⅜-in. solid stock. The support upright is ½-in. material, the horizontal support is ¾-in. stock. The ends of the house are fastened with wire brads and waterproof glue, the roof of the house is attached with four brass wood screws. The screws permit removing the roof for cleaning at the end of the nesting season. A triangular block is fitted under the joint of the roof halves for additional strength and to permit the ends of the screw hooks to be driven through the roof. Screw eyes in the horizontal support member accept the hooks, permit the house to be taken down. △ △



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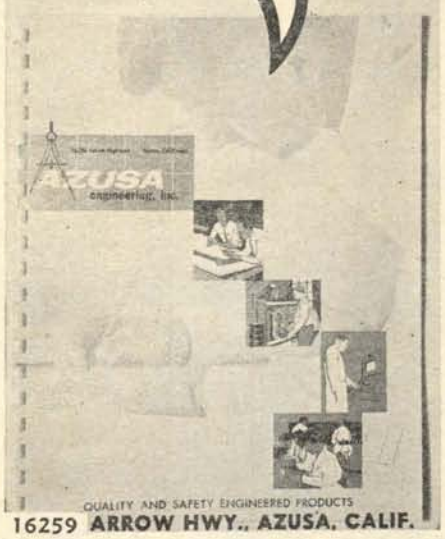

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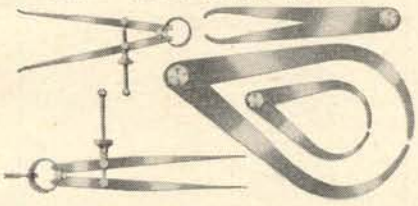

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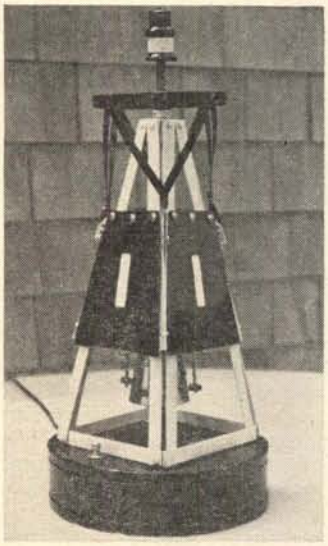

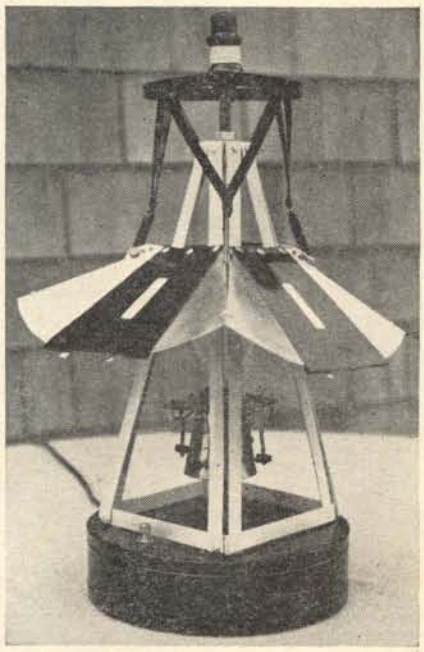

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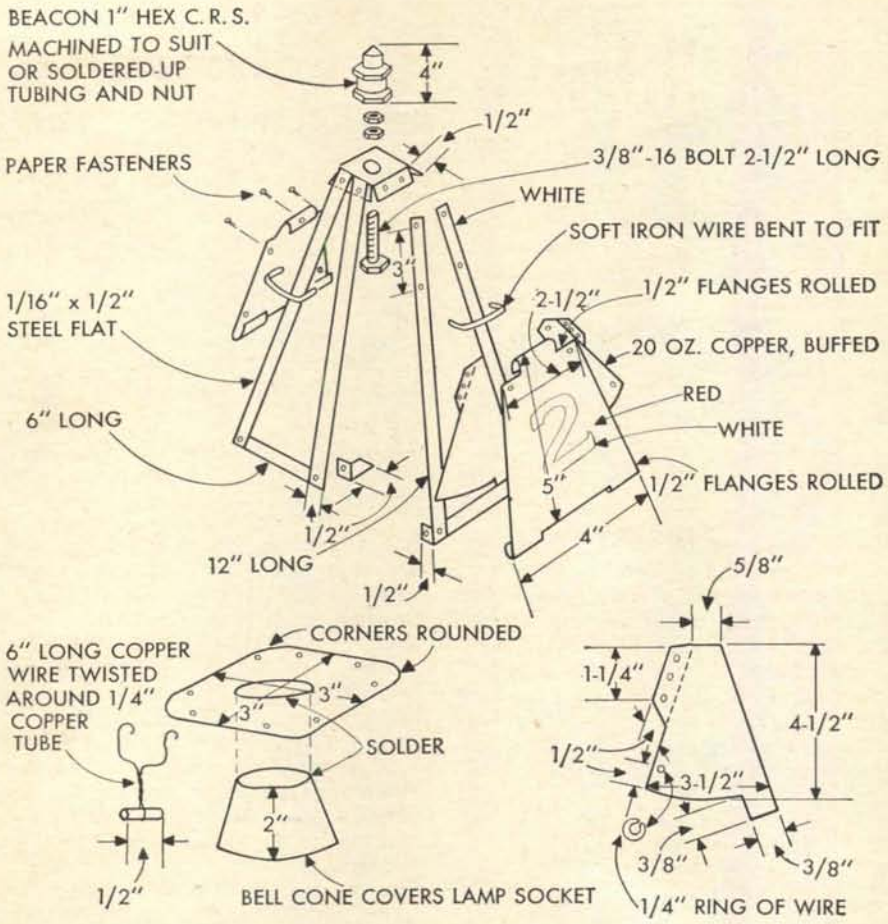
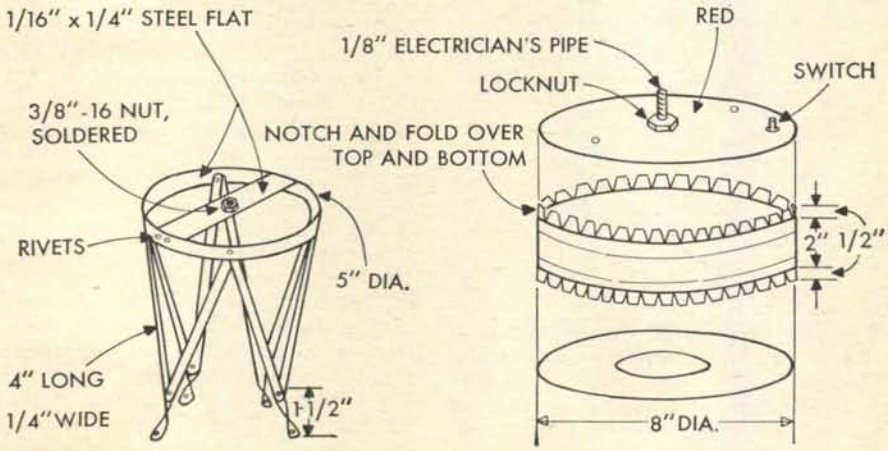
Start construction by making the base. Any light-gauge sheet metal can be used, or you may have a tin of the approximate size and shape that can be used. Drill a hole in the center of the top for a length of 1/8-in. electricians' pipe and fasten it with a locknut top and bottom. Length of the pipe will be determined by the socket, but will be about 2 in. Next, form the bell cone. Use a paper pattern to determine its size and shape. It is about 2 in. high, but the diameter is determined by the lamp socket. The plate that fits on top of the bell cone now is cut, and a hole is made to match the diameter of the top of the cone. Make the "hammers" from tubing and wire and fit them on the plate. (In actual practice these hammers strike the bell as the buoy rocks with the motion of the waves.) Now, assemble the lifting cage and solder a nut to the cross bar of the top. Assemble the main frame and attach it to the base. Slip a bolt up through the hole in the top of the frame and fit on a nut and locknut. Adjust it so that the bolt can be turned, the locknuts providing a slight clearance between the frame top and the head of the bolt. Place the lifting cage over the frame and turn the bolt into the nut on the top of the cage. When it projects enough, turn on the top "light" that can be made by soldering a nut and flanges to a length of tubing or by turning a piece of hex stock in a metal-turning lathe. Cut and assemble the side panels and triangular pieces and assemble with paper fasteners as indicated. Paint the various parts as per the legends. △ △





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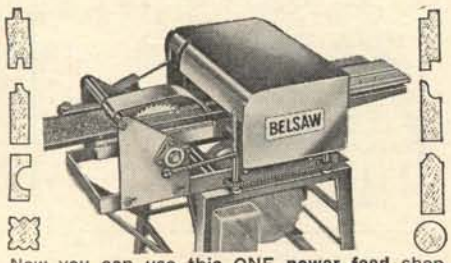

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WORKBENCH RESEARCH DEPARTMENT

EACH ISSUE IN THIS COLUMN WE WILL CHOOSE QUESTIONS ON HOME AND SHOP SUBJECTS FROM LETTERS SENT TO US. ONLY THOSE QUESTIONS WHICH HAVE WIDE APPEAL WILL BE ANSWERED HERE. QUESTIONS ON SPECIALIZED SUBJECTS WILL BE ANSWERED BY INDIVIDUAL LETTER FROM THE RESEARCH EDITOR'S DESK.

Dear Research Dept.:

It may not be worth an article in WORKBENCH, *but I sure would like to get any tips you may have on how to use a paintbrush properly. I often read about "get a good grade brush" to do an acceptable job, etc., but suppose I get a good brush ? this does not necessarily guarantee a good job, does it? Mr. B.R.D., Detroit, Mich.*

Dear Mr. B.R.D.:

Your point that there seems to be plenty of advice on getting the brush but less on how to use it is certainly true to some extent, at least. The American Brush Manufacturers' Assoc. has some pointers that may be of help to you. These are some of the "tricks of the trade" that professional painters follow to achieve first-class results.

When starting a paint job, apply the paint in spots first before spreading it with the brush. After applying a sizable daub, use long, smooth strokes to level. After the paint has been distributed over an area, finish with short, choppy, zig-zag strokes to remove marks.

Another mark of the pro is not dipping the brush too deeply. The right dip-level is about halfway up.

Though it is tempting to stroke away from the fresh paint, since it seems to make the job go faster, no professional would do this. Brush toward the previously painted surface—a better effect is obtained.

Also, try to keep the bristles pointing downward when working on a vertical surface. It will permit a fuller, more fluid stroke.

Now, concerning wide and narrow brushes, and where to use them. First is cornering. The temptation is to use the side of the brush to reach narrow areas. Don't. Use a narrower brush instead, to prevent "fingering," a term for a brush whose bristles are weakened at the sides through such misuse.

Don't use a wide wall brush on a pipe or other narrow, curved surfaces, such as radiators. Use a one- or two-inch brush instead. You can tell easily if the brush you are using is too wide by whether or not it "fishtails." That's when it parts in the middle, forming "fishtails" of bristles at either corner.

One final tip on using a narrow brush when painting window sash. Here the brush should be well dipped for, with plenty of paint on the brush in a heavy application, there is much less chance of smearing the window glass.

We hope that these tips will be of value to you. One more suggestion: clean and store your brush carefully when the job is completed. A good brush, properly used, carefully cared for between uses, will last a long, long time.

Dear Research Dept.:

We have cleaned up and painted the walls of our basement garage, have attached hooks to our garden tools so we can hang them up in orderly fashion—have really improved the looks of the room so that it makes a pleasant playroom for the children when the car is outside. We also pro-

vided brackets on one wall for several ladders. Since the ladders are not new and clean, but paint-spotted and even dirt-stained, my wife wants to paint them too, so they don't look so shabby. I have told her that this just is never done. Would you explain why, or can I do this? Mr. J.C.N., Ft. Worth, Tex.

Dear Mr. J.C.N.:

There is no question that from a decorating point of view, painting the ladders to match the wall would be good. But, please, DON'T DO IT! The reason that ladders are never painted is simple: so that the condition of the ladder always is readily apparent. Paint hides cracks, splits, loose steps or rungs, even decayed spots. Thus the only warning you might have of a dangerous condition in the ladder is covered with a pretty coating. In addition, rungs or steps become slippery when painted, certainly a hazard even if the ladder is structurally sound. The National Safety Council points out that there are too many ladder accidents anyway —don't add to their list knowingly. WORKBENCH readers are too valuable for this kind of loss!

Dear Research Dept.:

I have a one-story home with a crawl space above, then shingled roof. There is a large chimney going up the middle. Front room downstairs is a living room with a fireplace attached to this chimney. At this point the house is two rooms deep and there is a den behind the living room. Part of the den wall is the exposed brick of the chimney. Recently I have noticed stains on the ceiling—water stains—and a careful check of the roof does not indicate any leaks. Also, these stains are noticeable not only in the den, but in the living room too. We have had a fair amount of snow and recently some rain. There is

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MIDWAY WELDER Dept. DW-4 Kearney, Nebr.

loose insulation laid between the ceiling joists. What do you think my trouble is and what suggestions for a remedy? Mr. J.L.M., Wheeling, W.Va.

Dear Mr. J.L.M.:

In the first place, you are likely correct about there probably not being a leak in the wood shingles. At least that is not doing this, for it would have to be at least two bad leaks, one on the front and one on the rear slope, for although you didn't mention this in your letter, the accompanying sketch shows a peak running between the front and back rooms.

Slight leaks in shingles often have no effect on ceilings below, for the water runs down the roof beams to the eaves and then dissipates down the sidewalls.

We are more inclined to suspect the flashing around the chimney. Two things could be wrong: the sealant around the flashing may have deteriorated to a point where it is no longer effective; or it could have been done poorly.

A partial check of this can be made by studying the beams carefully from the inside around the chimney. See if there are any stains on them. Look also for stains on the bricks from ceiling to floor level in the crawl space. Such stains are valid evidence pointing to a flashing leak.

Assuming that you discover this condition, your work now is on top of the roof—no more head bangs in the crawl space.

The only way to repair the flashing is to completely re-do it. It is difficult if not impossible to spot the place where a leak occurs, because of varying conditions that govern the way the water flows down the bricks inside. The chimney must be resealed all around if you want to be sure the job is done properly. First, dig out all the old plastic or cement sealant, and make sure that the metal flashing fits tightly. Replace metal if (and this is unlikely) it shows signs of rusting. Then carefully reseal all joints, under the metal and on top, both against the bricks and against the shingles. Use a plastic sealer that does not set hard. There are a number on the market that will work admirably—and last a long time.

Remember, the material is low cost so your real investment is in time. Work slowly and carefully. This investment of a little extra time will assure a complete job and eliminate the need for re-doing. It is believed this flashing repair will end your problem of water leaks.

Dear Research Dept.:

In past years I have used a roller for painting, mostly for walls, and it always did a satisfactory job. I think we still may have a roller around the house, but I am sure that the nap no longer is any good. Now I read that there are many different kinds of rollers, or covers for them, and that these special covers will put any kind of paint on nearly any kind of surface. How true do you think this is, and if the claims are exaggerated, what will *they do? Mrs. D.R.O., Sacramento, Calif.*

Dear Mrs. D.R.O.:

If you have not investigated the possibilities of paint rollers recently, you are in for a very pleasant surprise, for the variety of shapes, lengths, and diameters of rollers, plus the choice of naps for the covers, will literally let you paint almost any surface, anywhere, with more ease than you can imagine. We won't go into details, for your local paint or hardware store will gladly suggest the right roller combination for the job you have in mind. However, there are rollers for applying enamel, house paint, texture paint, latex base, and even varnishes. Special naps cover rough surfaces such as bricks, cement blocks, and shingles, while inexpensive extension handles make it easy to reach hard-to-paint spots such as roofs, ceilings and outside walls. One of the slowest jobs for an amateur painter is cutting in window trim and sash. There is a special roller for this, too.

The next paint job you have, it will be well worth while to investigate the roller possibilities. Specialized, low-cost equipment for what you want to do will surprise you. And the results are good.

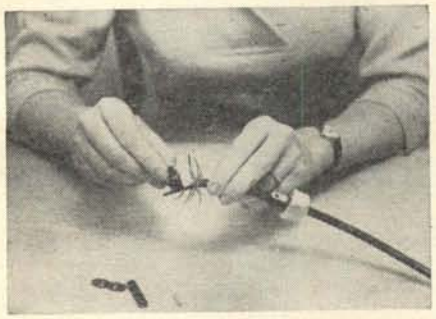
WORKBENCH
Women's Page

PHILLIP RUSH

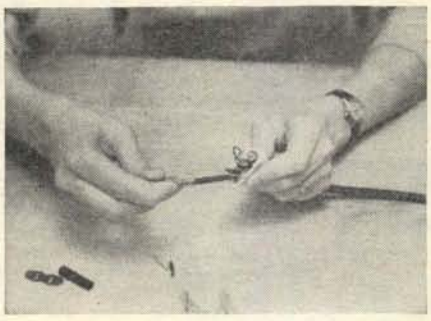
THIS IS THE FIRST article in what will be a regular department devoted to helping the lady of the house handle those small emergencies that so frequently occur when the man of the house is not available.

This issue is devoted to electrical repairs, the next will be on minor plumbing problems. Ladies, we invite your suggestions as to other problems to be covered. Write to the Workbench Women's Page, c/o WORKBENCH, 543 Westport Road, Kansas City 11, Mo.

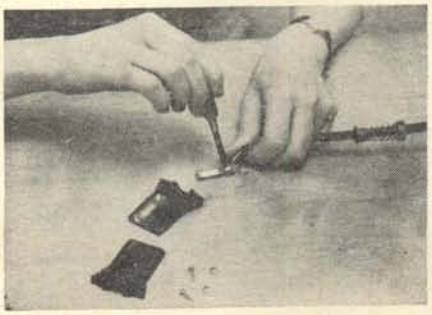
Frequent mishap is pulling one or both wires from a lamp plug. This is fixed easily, but next time remember to grasp plug, not wire, when removing.



To re-wire plug, first pry out cardboard disk, then insert wire through plug. Cut lightly through outer insulation about 1 1/4 in. from end; do not nick insulation on wires. Remove about 3/4 in. of insulation from inner wires as shown.



Loosen screws in plug, bend wires into semi-circles and fit onto screws, running wire clockwise around screws. Tighten screws firmly, replace cardboard.



On plugs such as used for toasters, irons, etc., remove two nuts and screws holding plug halves, slip back metal spring. Lift out contacts, loosen screws to separate, strip back insulation, fit wires in contacts. Reverse procedure to assemble; don't forget the spring.

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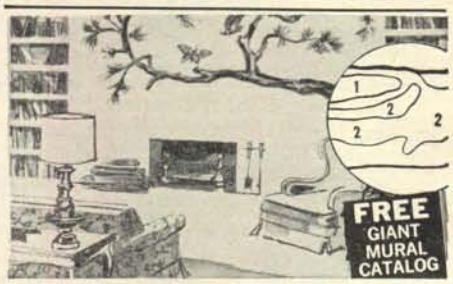

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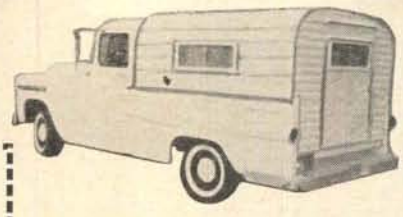

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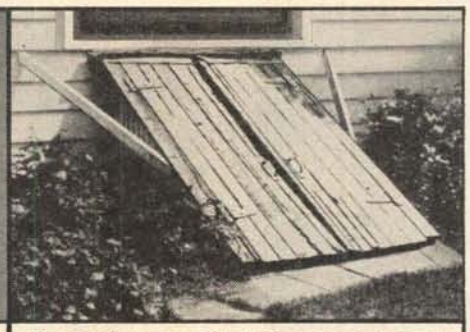
Has the face of our house changed!



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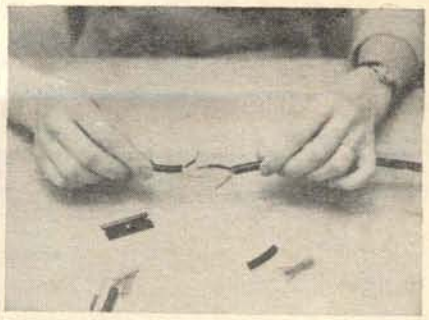
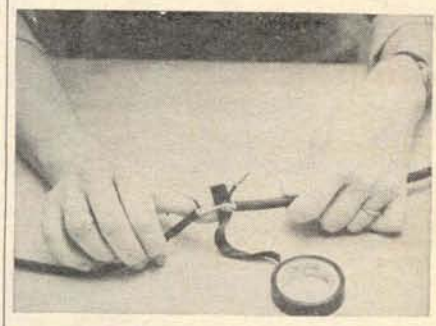
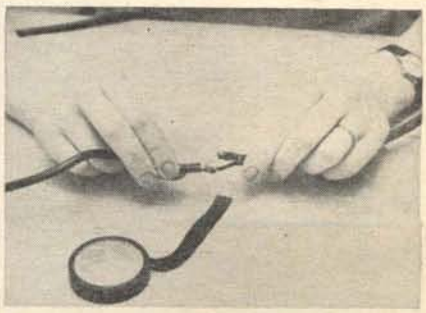


Splicing wires together may seem tricky, it is not. First, cut through outer insulation on each cord about 1¼ in. from ends, then slip it off. Do not nick insulation on inner wires. Next, cut off the white-coated wire in one cord, the black in the other about ½ in. from the end. As shown, the connections then will not be opposite one another. Strip insulation about ⅜ in. from each of the four wires.



Twist bare portion of one set of wires together, (both white-coated or both black), and bend back along shorter length of wire. Wrap this splice with plastic electricians' tape.



Twist remaining two wires together, bend back, then wrap new splice separately with tape. Finally, wrap both splices together, tape replacing removed outer insulation. Extend tape over outer insulation of both wires, so that strain on cord will be taken by tape, not by splices.

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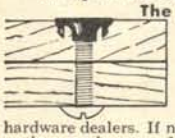

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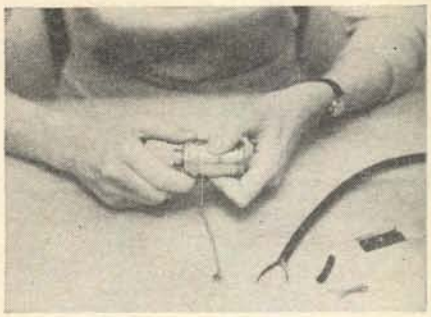
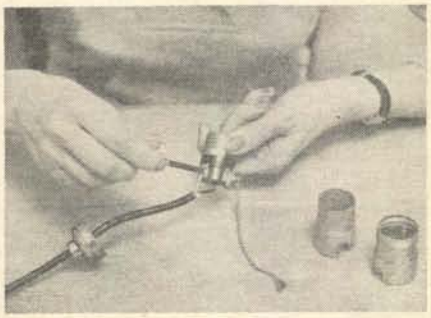
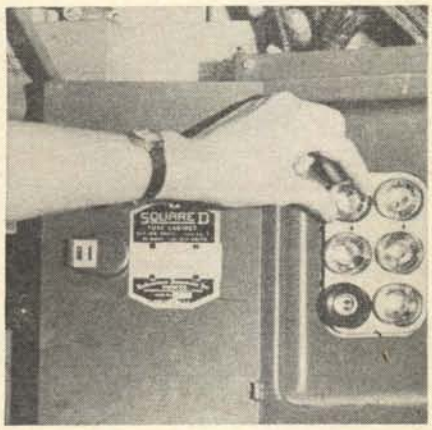


Pressing where marked on sleeve of most sockets permits removal of end. (Be sure cord is disconnected from wall receptacle!) Socket easily slides out of metal sleeve and inner, insulating sleeve. Don't forget to run cord through top of socket before rewiring. Unscrew contacts, loop bare wire around each post, (in clockwise direction, so tightening screws tightens loop), tighten screws firmly. Slip insulating and metal sleeves over socket, snap top onto metal sleeve.



Small screw at top of cap is for fastening socket to pipe or lamp bracket, has nothing to do with wiring.



Blown fuse usually shows burn marks in fuse window. Closer inspection will show metal band inside window has melted apart. Modern fuse boxes have circuit breakers, rather than fuses. Will indicate "off" when circuit overloads. Pushing on circuit breaker will reset it, change indication to "on." If circuit breaker trips "off" immediately, call an electrician, or, if you have a husband with electrical knowledge, have him check for the short circuit or other trouble when he gets home from work.

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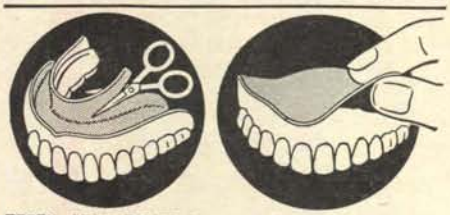

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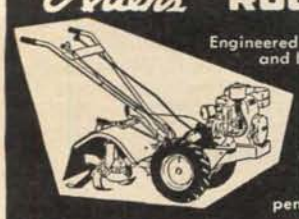
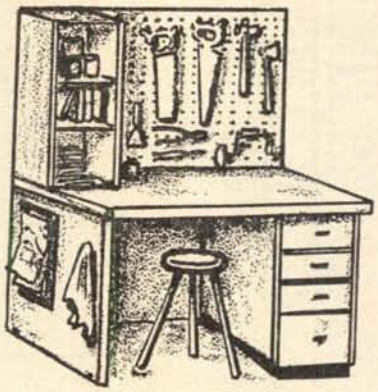
FOR HEAVY DUTY TILLING

Ariens **ROCKET**



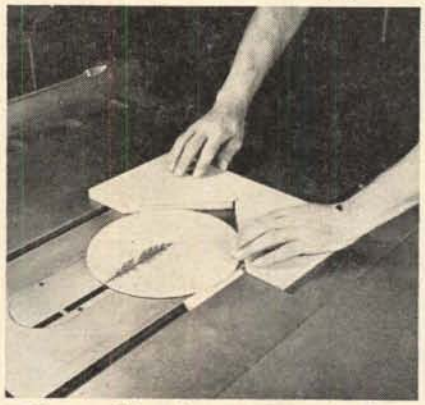
Engineered for commercial and large-garden tilling — powerful 5½ h.p. engine. 20" tillage; 2 forward speeds, reverse. Easy to use — ruggedly built for long, dependable service.

For free ROCKET literature write Ariens Company, 279 Calumet St., Brillion, Wisconsin.



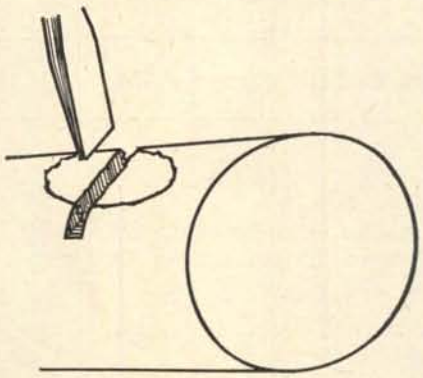
WORKBENCH SHOP TIPS

V-Block Miter Gauge



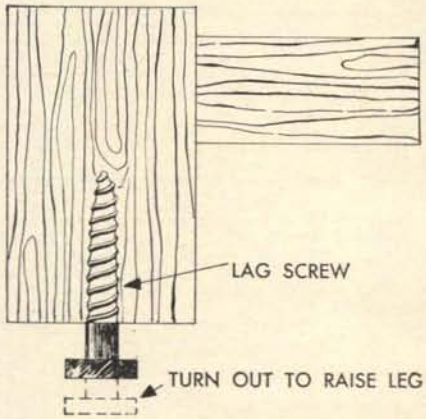
For cutting true segments from a circle, make a V-block that can be used in place of the miter gauge. The block is nailed to a strip of wood that just fits the miter-gauge slot. The jig also can be used for cutting miters on frame parts that have been pre-cut to length.

Removing Broken Bolts



When I have to remove a broken bolt, such as holds the clutch mechanism on a starter-motor shaft, or any similar set screw, I clamp the shaft in a vise, broken part up. A hacksaw cut is made across the bolt or screw, and slightly into the shaft if necessary. A screw driver can be used to remove the broken bolt, and the small cut in the shaft does not damage it sufficiently to cause any problem.
Coke Kimbrough, Prairie Village, Kan.

Bench Levelers



If a light workbench must be level for precision work, lag screws can be used as leg levelers. Bore pilot holes that provide a snug fit so the screws turn in firmly the last ½ in. of their length. To adjust the bench, use a wrench and level.
Daniel Bousha, Jackson, Mich.

Jig For Miter Cuts

Easiest way to make mitered frames is to cut all members exact size first, then miter each end. So that cuts will be exact, clamp a stop block on the rip fence of your table saw to gauge the position of pieces for mitering. Never use fence alone, as cut-offs will bind between fence and the saw blade.
R. J. DeCristoforo, Los Altos, Calif.

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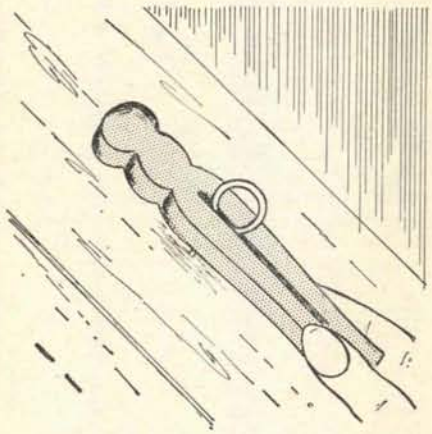
Avoid File "Wounds"

A file works best and cuts deepest when you bear down on both ends, but should your unprotected hand keep moving when the file "snags" and stops short, you can get a painful wound. To avoid this, cover the free end of the file with a short length of rubber hose, and grip the hose as indicated.

Clothespin "Wrench"



A regular wooden clothespin can be used to drive hooks and screw eyes. Simply slip the clothespin over the eye or hook and turn. The clothespin wrench is especially good when driving plated hardware, as it will not scratch the finish as will metal tools.
A. Zawistowski, Coon Rapids, Minn.

Shower Curtain Rings

Are handy around the workshop. Use them to thread loose washers and nuts according to size so they are always sorted and ready for use. Utilizing the rings makes for a more orderly tool box or workbench drawer.
Edward Bently, Jackson, Mich.

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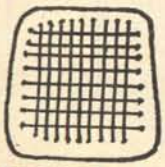

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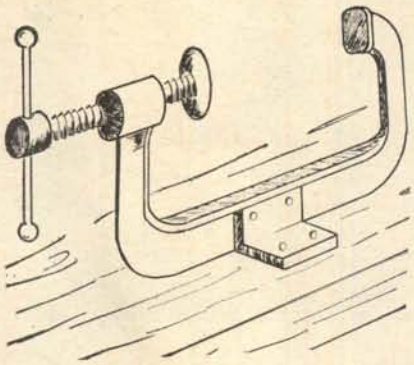
SHOPPING TIPS

Hobby Vise

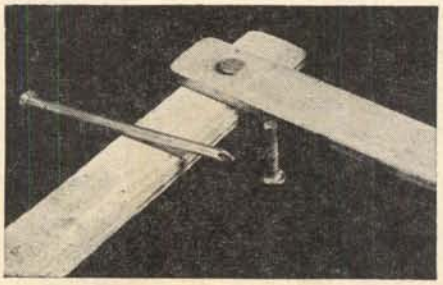


It often is difficult to work on small parts held in standard vise jaws because the width of the jaws interferes with cutting and filing operations. For this type work a vise made from a C-clamp works well. Attach the clamp to the bench by means of an angle bolted or welded to it as indicated.
Daniel Bousha, Jackson, Mich.

Decorating Tip

To color-match some small item to the flat-finish wall paint in a room without buying a full can of enamel: First, paint the trim, picture frame or whatever, with the flat wall paint. After the paint is thoroughly dry go over the item with one coat of thinned white shellac. This will produce the visual effect of enamel.
Coke Kimbrough, Prairie Village, Kans.

Nails As Rivets



In a pinch you can use ordinary nails as rivets. Drill the hole just large enough to accept the nail, then cut it so it projects above the work surface about 1½ times the diameter of the shank. Set the "rivet" with a hammer as you would any rivet.
R. J. DeCristoforo, Los Altos, Calif.

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REVOLUTIONARY PATENTS DECREASE COSTS, INCREASE EFFICIENCY. Top quality full scale power tools of heavy duty 100% cast iron and steel. Streamlined design features such as perforations on table tops reduce weight, cut material costs, cut polishing and grinding time—reduce production costs. Special patents provide added efficiency, accuracy, savings. Nothing left out but exp've gingerbread. Parts made, assembled, tested and packed in our own factories, shipped direct to you. No retail store handling or profits to add to your cost.

$9.95

Exp. Coll.

8" TILT ARBOR POWER SAW

Complete as shown, less blade. Incl. precision mitre gauge, ground cast iron table. If desired, RIP FENCE for easier work alignment, $3.50 add'l.

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CROSS-CUTS, RIPS, BEVELS, MITRES, DADOES, CUTS COMPOUND ANGLES. Patented motor mount takes any standard ¼ to ½ h.p. motor . . . keeps belt tight, assures perfect alignment at any angle, transmits full power. Table stays level—blade tilts, locks securely at any angle to 50°, raises, lowers 0"-2¼". Patented tilt mechanism has accurate etched scale. Takes standard blade, saw insert removes easily for insertion of any STANDARD dadoe heads, cutters, etc. Accessories, table extensions, when wanted, at factory prices. Versatile, rugged performance proven by almost a half-million users.

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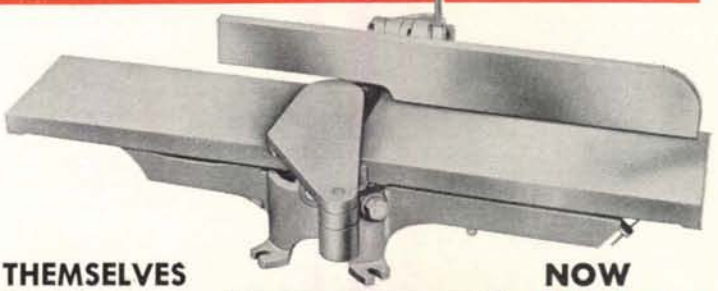
DOES THE WORK OF $60 UNITS

Now, at little more than a hand tool price, a guaranteed professional quality precision machine which does same work as skilled hand planing . . . much faster, more accurately. Make accurate glue joints; rabetting cuts for doors, window frames, table drawers; square taper cuts for chair legs; extremely accurate beveling. Helps amateurs produce quality work—with the sweat eliminated.



TOP QUALITY FEATURES SPEAK FOR THEMSELVES

• Precision ground cast iron tables, adjustable for depth of cut • Rigid cast iron base • New patent-pending design holds clearance between knives and tables at any depth • Rabett depth ⅜" • Hardened, ground high speed steel knives • Patent-pending fence adjustable to any position, any angle 0°-50° • Patent pending lift-off guard (nothing to loosen!) • Balanced steel cutter head. UNCONDITIONAL 10-YEAR GUARANTEE.

FULL 22" LONG, 4⅛"
JOINTER-PLANER

100% precision ground cast iron and steel.

NOW $19.95

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HIGH SPEED TILT ARBOR BENCH SABRE SAW

TAKES THE PLACE OF $100. BAND SAW—Zips through thick stock effortlessly. Makes outside and inside cuts a breeze. Cuts circles, curves, any angle 0°-45°. Ideal for intricate jobs as well as ripping and crosscutting. Multipurpose saw almost a complete workshop in itself! Free-cutting blade eliminates pull up of work piece. This cutting action, *unlike conventional portable* sabre saws, reduces friction, blade stays cool, breakage and dulling are minimized. Even the most inexperienced do-it-yourselfer can turn out professional work the very first time. Takes any standard ¼ h.p. motor or larger.

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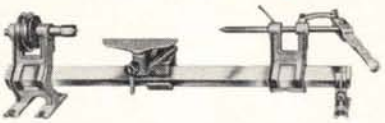

DOES THE WORK OF $40 UNITS—This sturdy all cast iron power tool will turn wood or plastics with the precision and speed of machines selling for 4 times as much. Has tubular steel bed, ball thrust cup center, spur center. T-Rest assembly, lever action tail stock. 2 speed pulley. Fits any motor. Perfect for the home or professional workshop, garage or farm. UNCONDITIONAL 10 YEAR GUARANTEE.

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Exp. Coll.

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DRILLS TO CENTER OF 10" CIRCLE — Rugged, dependable . . . all cast iron and steel. Table to ½" handtite chuck: max. 13½". Spindle has combination ball and bronze bearings. Adjustable stop for repetitive drilling. Precision ground cast iron table. Table assembly fully adjustable on column. UNCONDITIONAL 10 YEAR GUARANTEE.

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30 DAY MONEY BACK GUARANTEE

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AMERICAN MACHINE & TOOL COMPANY
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Please send me the units checked. Payment in full enclosed $.....☐ or $3 deposit each item enclosed, balance C.O.D. ☐ I must be fully satisfied or will return unit within 30 days for full refund. No questions asked.

☐ 8" Saw $9.95 ☐ 8" Saw & Rip Fence $13.45 ☐ Lathe $9.85
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Here's What Subscribers say about "Bargains" After Receiving Their first copies!

". . . Your book BARGAINS is just wonderful and I am very glad I subscribed to it."—H. K., Port Monmouth, N. J.

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PLUS MANY OTHERS!

THE ABOVE LETTERS WERE NOT SOLICITED IN ANY WAY OR MANNER—ALL ARE IN OUR OFFICE FILES! They are the enthusiastic reaction of subscribers after seeing their first copies of BARGAINS!

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Search your newsstand high and low. YOU WON'T FIND ANOTHER PAPER ANYWHERE LIKE IT! "Bargains" is available by SUBSCRIPTION ONLY. It's the only paper we know in existence that actually lists Bankrupt, Closeout, Surplus offers every month. Bargains so rare and terrific, you'll blink your eyes in amazement!

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